EQUITATION

By

HENRY L. de BUSSIGNY

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EQUITATION

THE AUTHOR MOUNTED ON "WHY-NOT" AT THE BEGINNING
OF HIS TRAINING

EQUITATION

BY

H. L. DE BUSSIGNY

WITH ILLUSTRATIONS

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To the public and to my pupils interested in equitation and to those most especially whose interest and generosity have made it possible for me to complete this work.

H. L. DE BUSSIGNY

PREFACE

For seventy-six years, as cavalier, as student, as instructor, I have ridden, under every sort of conditions, horses of every type, every conformation, and every breeding.

My first experiment, at the age of five, was with a donkey, young and entirely unbroken. At the beginning, I was more often on the ground than on the donkey's back; but after six months of perseverance, all its gambols failed to unseat me. At eight years, I had a pony, thirteen and a half hands high; and I received instruction from the Comte d'Aure, Esquire-in-Chief of the cavalry school. This Grand Master was always repeating, "Seat. Seat. It is the *sine qua non.* Be a cavalier first. Afterwards it will be possible, with study, to become an esquire."

From eight to seventeen, I practiced the precepts of Comte d'Aure in various riding-schools. At seventeen, I entered the French cavalry. I was at the battle of Solferino in 1859. In 1860, I was fighting in Syria; and in 1861, in Morocco. From 1862 to 1867, I was with Maximilian in Mexico. The next year saw me in Algeria and the Sahara Desert, fighting the Kabyles and Bedouins. In 1870 came the Franco-German War; and I fought the Prussian Uhlans.

It was when hunting and fighting other men, hunted and fought by other men, on horseback night and day, that I came to realize the truth of the formula, that seat is the rider's *sine qua non.*

In the army, for the cavalryman to be able to ride is all that the manual asks, since the discipline is unalterable when moving in troop. But, for the individual, the French army protects and encourages studies of the different methods of the various masters of the equestrian art. Before I entered the army, while still at the college, I followed a course of instruction under Baucher, who was then teaching in the school at Collin, Maneye du Rhone.

Although Baucher's method was never adopted by the French army, his ideas have very deeply affected cavalry traditions, because of the great number of officers who have been sent to Saumur and Lunéville to study and report upon his system. Several of these officers were my instructors after I entered the cavalry; and my studies of the art continued under their very able direction.

Experiment with different methods is, however, nearly impossible in the army; so that it was only after I came to the United States in 1872, and, as a civilian, became proprietor of riding-schools, manager of schools and riding-clubs, head instructor in New York and Boston, that I was able to develop certain principles, certain means, certain effects, which had before not been clear in my mind.

Equitation is the sixth branch of horsemanship;

and is divided into military, racing, steeple-chasing, polo, and the promenade. Only the last of these is treated in this work.

Riding is one of the most wholesome of recreations, both for mind and body. It does, however, necessitate a certain special and natural aptitude. Anybody, reasonably well conformed morally and physically, can practice the ordinary equitation as a health-giving exercise, easy to acquire. But riding practiced as an art or as a science offers serious and multiplied difficulties, in the solution of which by the student is found all the mental pleasure of the avocation.

The two greatest masters of the art are Baucher and Fillis. With them, in the light of their principles, riding has become truly an art, because these masters have been satisfied to set forth their practices, without giving the reason, the wherefore, of the acts which they dictate. For example, the two effects of the rider's hand upon the lower jaw of the horse impel the animal to the right or to the left. The pressure of the rider's legs upon the horse's flanks gives two more sensations. Here, then, are four signs, by means of which the rider communicates with his mount and thereby controls its entire mechanism. These sensations, caused in a living animal, certainly have for it a meaning: they oblige certain parts to act. The rider closes his leg upon the horse's right flank, and the horse turns to the right. But what is the mechanical reason?

When each and every movement of the horse in response to its rider's signals is explained on mechanical principles, then equitation is no longer an art. It has become a science, and therefore invariable.

The difference between my system of training the horse and the systems of Baucher and Fillis is, in part, that I have carried farther the science as distinguished from the art. But besides this, while Baucher and Fillis trained their horses for the sake of executing the movements of the high school, I employ these airs of the high school, not as an end in themselves, but as a means for developing the physical and mental qualities of the horse itself. These masters specially chose the animals which they were to train. I, by means of my system of gymnastics, seek to improve and develop an animal of any original conformation that may be given me.

The purposes of this manual are, therefore, to explain the mechanical reason for every effect which the rider exerts on the horse, and to set forth the successive steps by which, practically, an actual animal is to be trained and developed. Underlying principles and theories are everywhere explained with the greatest possible clearness. In spite of a good deal of inevitable condensation, the methods here set forth should prove perfectly easy both to understand and to apply.

H. L. DE BUSSIGNY

Boston, May, 1921

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EQUITATION

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PART I

THE USUAL OR INSTINCTIVE EQUITATION

EQUITATION

CHAPTER I

INTRODUCTION

EQUITATION is divided into several branches: that of the promenade, that of the army, of the races, of polo, of the circus. The equestrian art consists in the practice of these different sorts of equitation, in teaching the principles accepted for their practice, and in training the horse for these different uses. The present work, however, will treat only of the equitation of the promenade.

This portion of the general art has, in its turn, three subdivisions. These are:

The usual or instinctive or "lateral" equitation.

The rational equitation, *l'équitation raisonnée*, based upon reasoned principles worked out by the masters of the art.

The scientific equitation, *l'équitation savante*, based upon the scientific study of animal motions, and involving a scientific system of gymnastics for the physical development of the horse, designed to adapt the animal to the controlled use to which it is put.

It is evident that, from antiquity to our own epoch, the usual or instinctive equitation has been

and is still the most practiced. In the infancy of the art of horsemanship, men taught themselves by instinct and habit, not yet having even the most elementary principles. Soon, however, from custom and from the practice of experienced riders, there

AN ANCIENT GREEK RIDER

arose certain theories and methods, which were taught to beginners. Even in the earliest times riders had the idea of balance; but they applied it only to the seat of the man on the horse, and did not at all consider the balance of the horse under the weight of the man. This was assumed to be taken care of by the animal's own instincts.

When, later, this instinctive horsemanship had still further progressed, and there had been invented saddle, bridle, stirrups, and spurs, the experience of

riders and teachers developed the principles which govern the use of these instruments. Such masters as Pignatelli, Gaspard, Saulnier, Pembroke, the Duke of Newcastle, Comte de la Guérinière, and others, worked out the theory of mounting and dismounting, of seat, of the lateral effect, of the bridle, of the use of the spurs, and of the pillars. In all this they considered, not only the improvement of the rider's seat, but also the collection or balance of the horse. Of this last, however, they had only a confused and elementary conception. They thought that the horse, when mounted and in action, would always find its proper balance for itself; and so they devised series of movements, which, executed by the horse at walk, trot, and gallop, should practice the animal in carrying itself with its load. There is, nevertheless, a vast difference between such purely instinctive training, and the rational equitation which understands the reasons for the horse's condition of equilibrium, and allows him to execute the various movements only while retaining this state. The early masters of equitation were ignorant of many facts of animal motion now known to science, and they had no clear idea of the animal mechanism involved. Ignoring the theory of levers, they controlled the horse by the lateral effect of the rider's hand and leg acting on the same side. It is, therefore, perfectly fair to call this kind of equitation, instinctive, usual, lateral.

USUAL OR INSTINCTIVE EQUITATION

This lateral equitation can be practiced by the beginner by rule of thumb, without acquaintance with the principles or theories of any formulated method. But a learner makes faster progress and is in less danger of accident when he puts himself under a riding-master. The riding-master or the riding-school will provide a horse already trained, with all the needed apparatus. It is then not necessary for the pupil to train the animal; but only to learn to mount and dismount; to sit properly on the horse when standing, walking, trotting, or galloping, in a word, to make his seat; and to control the horse by the lateral effect at these different gaits, in any direction, without losing the correct position. When the pupil has acquired a sufficiently firm seat, he may practice jumping. This will test his progress, and will also show him what he has still to learn. My own long experience proves to me that the rider's seat is the foundation of his progress. Without seat, nothing can be learned. With seat, everything, simple or difficult, becomes possible. The cavalier can never have too much of this *sine qua non.* Indeed, he can never have enough.

CHAPTER II

MOUNT, DISMOUNT, AND VAULT

THE horse, being saddled and bridled, quiet, and trained to be mounted, is held by the man, who will mount on the left side.

First method: The rider, facing the saddle, in

MOUNTING: FIRST METHOD

front of the stirrup, and holding the reins in his right hand, places this hand on the pommel of the

saddle, while with the left he grasps a handful of hairs of the mane. Rising on the toes of his right foot, he places his left foot in the stirrup, and, after two preparatory swings of the body up and down, by bending and straightening the right knee, on the third, he raises himself upon his left stirrup, assisting himself by both legs and by the left hand. He is now standing erect in the left stirrup, facing toward the horse's right. The right hand, always holding the reins, is next placed upon the right panel of the saddle, the wrist bearing upon the upper part, the upper part of the body is inclined forward, and the right leg is passed over the horse's croup and the rear part of the saddle. Finally, the rider, still supporting his body by the right hand, comes easily down into the saddle, abandons both panel and mane, brings his right hand with the reins in front of him, and without looking or any help, places his right foot in the stirrup.

All other methods of mounting are variations of this, necessitated by peculiarities of either man or horse.

If the horse is tall and the man short, the latter can best reach the stirrup by standing with his left side close to the horse's shoulder, and facing to the rear. Some riders, on the other hand, prefer to face forward, their right side at the horse's left flank, and the right hand, which holds the reins, on the cantle of the saddle.

Still another method, if proportions of man and

horse permit it, is to take the left reins in the left hand, which also grasps the mane, and the right reins in the right hand, which rests on the pommel. The rest of the action is like the first method. The

MOUNTING: SECOND METHOD

advantage is that the rider always has the reins in both hands, and so is ready to control the horse in case of need.

In dismounting, the rider, after stopping his horse, takes all four reins in the right hand, placing this in front of the left and resting it upon the

pommel. The left hand, now free, he carries above the left reins and grasps the mane. He then frees his right foot from its stirrup, and raises his weight on his left foot, steadying himself with his two hands. The body being now upright and clear of the saddle, the rider swings his right leg over the croup and brings it near the left. Next, he bends the left knee till the right foot reaches the ground, and takes his left foot from the stirrup, holding all the while to both saddle and mane. Last of all, he lets go the mane with his left hand, and at the same time drops the right reins, still keeping contact with the left, advances two steps to the horse's head, and grasps with the right hand near the bit, either all four reins or else a pair belonging to either the snaffle or the curb.

Mounting and dismounting should be done deliberately, but correctly and without hesitation.

Vaulting is a gymnastic exercise which can be performed, not only with a horse specially trained and equipped for this purpose, but also with an ordinary saddle horse carrying saddle and bridle. When a specially trained animal is employed, it is kept at a canter, in a circle to the left, while the instructor, standing at the center of the ring, with a long manege whip, keeps the gait regular and cadenced.

The best horse for this exercise is a strong, well-rounded, and well-developed cob, of fifteen hands, of good temper and limbs, which has been trained

both to hold a regular canter and to stop at the instructor's order. It should have on its back a strong surcingle, with two iron handles, directed forward, not back, and set eight inches below the top of the withers. This must be so firmly fastened in place that it cannot move even if the entire weight of the man bears on one side. The horse is reined from the cavesson with a snaffle to the surcingle.

The beginner is first practiced in springing from the ground when the horse is standing still. For this movement, the pupil stands behind the horse's left shoulder, his right hand grasping the left handle of the surcingle and his left a tuft of hair of the mane, the feet near together and the body straight. He then counts to himself, one, two, three, bending his knees sharply at each count. With the third count, he springs upward, helping himself with his hands, until he holds his body straight, supported on his arms. Then, keeping the left leg immobile, he swings the extended right leg over the croup and seats himself on the horse's back. Meanwhile, the right and left hands have shifted to the handles on their respective sides.

As soon as the pupil vaults easily to the back of the standing horse, he may execute the same movement with the horse walking and trotting.

To vault upon a horse at a canter, the pupil takes the right handle of the surcingle with his right hand, the nails below, and the left handle with the left

hand, the nails up. He keeps the same cadence as the horse, the man's leg striding with the corresponding fore leg of the animal. As the horse plants its left foot, the man quickly advances his own right foot to a position near the left, and before the horse again lifts its left foot, the man bends slightly his knees, springs into the air, pulling himself by his left hand, and immediately passes his right leg over the haunches of his mount, shifting his left hand at the same instant to bring the nails below like the other. This movement needs decision, quickness of action, and energy on the part of the man, since he must be on the back of the horse before the latter's right fore foot returns to the ground after its stride. No time, therefore, can be lost.

When the rider is mounted and the horse continues its canter, the man should, for the sake of his future progress, learn to feel the jolt of the horse's motion, and to neutralize this by the relaxation of his muscles and the suppleness of his spine, all in the exact cadence of the step. For it is on this sense of cadence that everything else depends. If the pupil has not that, he will begin his movement too early or too late, and thus render the maneuver most distressing to the spectator and nearly impossible for himself.

When the pupil has become accustomed to the canter cadence, he may be set to practicing the following progressive series of movements:

Seat the two legs to the left.
Seated to the left, jump to the ground and to the back at the same stride.
Seat the two legs to the right.
From right, jump astride.
From astride, seat to the left.
From left to right.
From astride to the ground and seat to the left.
From left to the ground and seat to the right.
From right to left, jump, and astride.
From seat to the left, to the ground, and from the ground to the right, and astride.
From seat to right, ground to right, ground to the left, and astride.
From astride, jump to the ground, to the left, to the right, to the ground, from right ground to left ground, from left ground to right ground, from right ground to astride.
From astride to facing backward astride.
From astride backward to astride forward.
Same movements repeated at each tempo of the canter.

These movements may be supplemented by others; but this series, well executed, is enough to give confidence and quickness to ordinary pupils. The added movements, even if very brilliant, will not be of great practical use.

When vaulting is taught with the horse saddled and bridled, the methods are the same except that

the left hand grips a tuft of the mane instead of the handle of the surcingle.

The instructor will be successful if he makes vaulting a pleasure to the pupil; but not if he makes it hard work.

CHAPTER III

THE SEAT

THE seat of the rider on the horse has been determined in its details by anatomy, by veterinary science, and by equestrian art. Anatomists have maintained, with reason, that the more nearly perfect the physical conformation of the man, the more easily will he seat himself correctly upon his mount, when the two are proportioned to one another. Veterinarians have approved the position, finding in it no cause for unsoundness, loss of health, or interference with movements, weight carrying, and regularity of gaits. Masters of equitation have fixed the details of the position and taught the theory of it in the light of its efficiency for controlling the horse by hands, legs, and weight, both standing still and in motion, at different gaits, and for neutralizing the shocks from the moving animal. Theory gives the idea of the position; but only practice brings the adhesion, contact, stability, suppleness, and confidence which constitute the state called seat.

Seat is the basis of equitation. By the seat the rider is in contact with his mount, communicates to the animal the confidence he has in it, and, on the other hand, is notified at once of the horse's

disposition to obey or refuse. Only with a good seat is the rider able to use hands and legs, and to alter gait and direction by shifting accurately his weight. As we are all of us too ready to neglect those fundamental laws which control our lives, forgetting that if these laws of nature were suspended for even a quarter-second, life itself would cease, so as riders we tend to ignore the basal principles of inertia and weight as they affect action and seat. If the horse commit some fault, the result of our own improper disposition of the weight upon his back, we blame the horse. Yet the fault is ours; for the load which we put upon him is really very great when we consider carefully the muscular effort which the animal must put forth in executing our directions.

The rider, being mounted, should feel the saddle in contact with the coccyx and the two hip bones. These serve as a base, and bear the weight equally. They are the fixed point from which the upper part of the body moves to right or left, backward or forward, without ever ceasing contact, except when rising to the trot. The thighs, inclined at an angle of forty-five degrees, should be turned, without effort, so that their flat sides are against the saddle, which they press equally. If the flat sides of the thighs are not against the saddle, contact and adherence are lost. If they are placed thus with effort, the muscles are tense, and therefore cannot be flat. This not only prevents adherence, but, in

addition, tires the muscles so that they cannot act when most needed. (Frontispiece.)

The thighs are sloped forty-five degrees, because in that position they grip most forcibly. They are held evenly against the sides of the horse, since otherwise the adhesion is unequal and the seat not steady, the rider having disturbed it by his own fault. The knees should be kept free from all stiffness, so that the full length of the femoral muscles may be in close and permanent contact with the horse's sides, and the knees themselves, when necessary, may grip the saddle strongly and quickly. They should not, however, press constantly and strongly, lest as in the case of the thighs, the muscles become too fatigued to act when called upon.

Such is the first part of the position of the seat, the immovable part, the foundation of all the rest. Two remaining portions of the rider's body are movable, the trunk above the hips and the legs below the knee.

THE POSITION OF THE TRUNK

THE loins should be braced, but free from stiffness. Otherwise, they will communicate their rigidity to the entire upper part of the body, which will in consequence be less ready to respond to unexpected movements of the horse. The rest of the trunk, also, should be upright, easy, and free. It must be flexible, else it cannot be handled as a free mass,

swinging forward and backward and from side to side without affecting the seat. It must be upright for the sake of the balance.

The shoulders should be kept down, else the breathing will not be free, and the rider will tend to round his back, draw in his waist, and so throw his spine off the perpendicular. But if the shoulders are forced too far back, they will hollow out and impede the free action of the arms.

The arms, likewise, should be kept free, so that their movements may be entirely independent of those of the body. Moreover, if the arms be stiff, this stiffness will extend to the hands, which hold the reins, and diminish their "intelligence." The elbows should fall into an easy, natural position at the sides. If they are kept too close to the body, the position appears uncomfortable, and the wrists cannot be raised or lowered without displacing the arms and moving the upper part of the body.

The head should be carried erect, easy, and free from the shoulders. The head is itself heavy, and being at the upper end of the spine and farthest from the point of support, any change in its position affects markedly the balance of both rider and horse. I do not, however, mean to suggest any such position as that of the soldier on parade, neck immovable and eyes straight ahead. What I mean is that the rider's head should move to the right or left, freely, but without any stooping, the eyes looking far ahead, since one cannot see distant

objects without noticing intermediate ones also. The head in its movements should be upright, and should turn without carrying the shoulders with it.

The forearms should make a right angle at the elbow, but only as an intermediate position to be altered either way as different effects are desired. The two wrists should be kept at the same height, the fingers facing one another and the thumbs up. If one wrist is carried higher or lower than the other, the corresponding rein will have more or less effect on the horse's mouth. The two wrists should be separated about six inches, the usual thickness of a horse's neck. If the reins are held farther apart, they will, in proportion to their separation, act more upon the bit itself and less upon the bars of the mouth, and so be less felt. If, however, the reins of the snaffle are held nearer together, they will exercise a pressure on the lips, which is efficient if not too long continued. I do not mention here bridle bits, curb chains, and other instruments of torture, long ago discarded by sound equestrian art.

The wrist joints should be kept pliable, so as not to communicate stiffness to the arms and neck. Stiff wrists, moreover, prevent the rider from feeling the horse's mouth. The thumbs should be kept up, since in this position the two hands are most uniform and readiest to affect the mouth of the horse, either when resistance is to be followed by yielding or when the rider slackens the reins. Moreover, when the thumbs are up, they press

somewhat more firmly upon the reins, so that these are less likely to slip. Finally, if the fingers are turned up, the elbows will be stiff and too close to the body. But if they are turned down, the elbows will stick out.

The bridle is, after all, the most important means of controlling the horse. The hand manages the bit by way of the reins. The bit, by its contact, governs the mouth. The mouth communicates with the neck. The neck guides the front limbs. Therefore, must the hands be kept in place, and the reins be of equal length. For if the reins slip in the fingers, control of the front hand is, for the instant, lost. For many reasons, then, it becomes important to keep the thumbs upon the reins.

THE POSITION OF THE LOWER LEG

The leg below the knee should fall naturally. If ankle or calf is stiff, the knee joint also will stiffen, the knees will tend to get up on the saddle, and the leg will not work freely in managing the horse. The upper part of the calf should press the saddle lightly. If it presses too strongly, fatigue results. Moreover, the rider cannot carry the legs backward without opening the knees, and thus he loses one of the essentials of a good seat. Yet, on the other hand, if the calf does not touch the saddle at all, then the leg must be too far out at the side, too far forward, or too far back. In the first two cases, the legs will be too far from the body of the horse to

produce any effect. In the last case, the effect will be permanent, and so destroy itself.

In riding without stirrups, the foot should fall freely, lest the fixing of the ankle joint stiffen the rest of the leg. When stirrups are used, the foot may either be kept well home, or only the ball inserted. In either case, the rider must be able to use the lower leg, without stiffness, in managing the horse.

It is often said that the heels ought always to be lower than the toes. This, however, seems to be nothing more than an ancient prejudice of cavalrymen, who see nothing but general appearance and cling to dear old routine. If only the knees do not come up too high on the saddle, and the feet are not too much turned out so as to spur the horse unwittingly, one may wear his stirrups as he likes. In fact, one need not use stirrups at all. Only one must remember, that although in riding-school and park, a third of the foot in the stirrup is sufficient, hunting and racing on the flat and riding across country and charging the enemy, all require the whole foot there. The former position gives more freedom for working the legs; but no one ceases to be a good horseman by putting his feet a little more forward or back, provided always that the seat is not disturbed and the legs are free to manage the mount.

I have described a rider's position on horseback minutely and at length. It will take a beginner

five years of practice to master it satisfactorily. For, in the first place, to secure perfect adhesion, the muscles of the thighs must acquire a certain shape. But while one is attending to the position of the head or the arms, the thighs get out of place and have to be readjusted. Moreover, nothing except long practice will enable one to grip forcibly with the thighs, without communicating the least contraction to the legs or to the upper portion of the body, which must always remain entirely independent of any action of other muscles.

It seems easy, does it not? Well, then, sit on a chair and try to bring the legs and the upper part of the body backward simultaneously. It is not so easy as it looks. But on horseback one has to remember everything at once, and to do everything at the same time. My readers will understand now, that I, like all practiced teachers, am but an open book from which a pupil gets information at any moment. But, after all, the pupil himself is his own best teacher, if only he will practice long and constantly.

I was, myself, never permitted stirrups from four years of age till ten. During this time I used to accompany my father on hunting parties; and if I happened to fall, he would always count, "One less," referring to the seven falls which by tradition precede the acquisition of a seat.

Yes, to acquire a good seat, one must learn to ride without stirrups!

But to ride without stirrups, and especially to trot, before all the muscles have been relaxed by riding at a walk and progressively, is surely a wrong practice. Because, if the rider contracts his limbs to resist the movements of the horse, he at once makes the muscles too set to assume the shape necessary for perfect adhesion. Must one, then, walk a horse for months and years? It would, indeed, be the best method, though rather impracticable in view of the probable expense.

I, therefore, advise the beginner to use stirrups, so as to fall as few times as possible — and thus save his parents' feelings. Let it be, nevertheless, the first object to become, as soon as possible, fully able to sit upon a saddle, without stirrups, at all paces.

What, then, should be the ordinary practice? For the first winter, ride at the school, without stirrups, but always in the presence of the instructor. Learn for yourself all you possibly can, until you have gained a certain degree of stability of seat; and do not neglect to practice during the summer.

For the second winter, organize a class of ten or a dozen young people of about the same age and advancement — boys only, no girls. Put the class under a teacher, who, remembering his own early training, will work with enthusiasm. Have lessons three times a week for six months.

Here is a programme for such a class: Walking

without stirrups. Calisthenic exercises. Stopping and walking. Individual turn. Successive semi-turn. Successive turn. Trotting, Calisthenics, etc., as above, while trotting. Walking. Individual half-turn. Individual turn, stopping, and starting again to a trot. Galloping. Calisthenic exercises, etc., as in walking and trotting. Stopping and starting to the gallop. This whole programme is to be gone through, first with stirrups, and then a second time without.

The time has not yet come for learning to manage the horse. This will come later. At the end of the second year, the young pupil ought to be able to perform all these movements easily, without stirrups. Circular movements have been included in the programme, since the pupil should be made accustomed to all directions and to producing all kinds of movements.

Let the pupil also bear in mind that just as to become a good sailor one must not be afraid of seasickness, so to become a good rider one must not be afraid of the rough movements of the horse. Once accustomed to these, one learns in due time to counteract them. But if one tries from the start to repress these sudden jerks, he never becomes used to them, and his contractive efforts will, sooner or later, be turned into stiffness.

Now this condition of stiffness is precisely what the learner ought to avoid from the very outset. But for the beginner the greatest difficulty of all is

to put the proper amount of contraction into the muscles of the thighs, so as to obtain adhesion, and yet at the same time to prevent this contractive force, which belongs to the immovable portion of the seat, from interfering with the suppleness of the two other, movable, parts of the body. This difficulty is best met by the following calisthenic flexions:

Movements of the head: down, up, left, right.

Of the arms: up, down, forward, back, rotation at the shoulder.

Of the spine: backward, forward, left, right.

Of the lower legs: forward and backward, with turning of the toes inward from both positions.

Of the ankles: toes in, out, up, down.

Of the thighs: knees high, and knees down, but always with contact between the saddle and the base of the spine.

These exercises, executed at walk, trot, and gallop, will enable the beginner to move, freely, legs, head, arms, and body, while at the same time keeping the seat firm.

But the adhesion of the thigh muscles must be produced and maintained, solely by the pliancy and flexibility of these muscles, and not at all by their permanent contraction. Such contraction should be but momentary, never spreading to other parts of the body, which must always remain unaffected by any effort of the thighs.

Moreover, the trunk and head should be able to

move forward or backward of the perpendicular, and to the left and right, without in the least displacing the weight from its base, and without any effect whatever upon the contact, adhesion, or other element of the seat. So, too, should the lower leg be able to swing backward from its position and forward again, without any tendency to advance too far, and without any disturbance of any other member.

In short, both the upper and the lower parts of the rider's body must be trained to work freely on their respective joints, separately or together, in any direction, yet without affecting in any wise the immovable seat.

For the seat is the focus of all equestrian feeling. By way of the seat, the rider senses the coming movements of the horse. By means of the seat, with other aids, he controls or prevents these. Furthermore, it often happens that a fidgety animal will submit unresistingly to a rider whose seat is firm, while another rider, unsteady of seat, will manage it only with difficulty. The creature seems to be affected one way or the other, according as it can or cannot shift the rider's weight.

Some horsemen are of the opinion that this moral effect passes from horse to rider; some that it travels from rider to horse. I myself think that both are right. For consider any horse, standing still, mounted by a rider having the most perfect seat, but who moves neither hands nor legs. Where,

then, is this moral effect? But let the animal once start to move, then he must immediately be sensible of the rider's quality. The rider who has a correct seat will not permit his mount to proceed according to its own fancy, but will constrain it, confidently, unhesitatingly, by rational and positive means. On the other hand, the rider whose seat is not firm will sometimes surprise his horse and sometimes let it go. His control will be strained, hesitating; and the horse will feel this.

Moreover, in spite of inconsistencies in certain systems, I cannot but believe — and the longer I study, the better I am convinced — that the seat is much improved by training horses for one's self. For after all, it matters little what the origin or the quality of the particular system adopted, so long as the rider takes and gives with hands and legs, and thus learns to move his members without disturbing his seat. Whenever, by constant practice, this habit has become fixed, then the rider will maintain his seat without ever thinking of it at all. But in that case, he will, obviously, communicate his own confidence to his horse, while at the same time he forestalls easily any untoward movement, rearing, bucking, arching the back, shaking the head, kicking, and the rest.

But how can a rider do all this without self-confidence; and how shall he be self-confident without a steady seat? The indifferent rider, who lets his horse go as he will, who hangs on by the

reins, who grips the animal's sides with the calves of his legs, has no use for seat. But whoever wishes to ride at the regular paces with grace and comfort, can never have too strong a seat. So long as the horse walks, mere contact is sufficient. Riding outside the school, and rising at the trot, necessitates contact of the knees, since at each step contact of the thighs is lost. The very fast trot demands a close seat. For the trot *au rassembler*, commonly called "passage," grip is essential — since I do not know one horseman who can trot *au rassembler* with a rising seat. The gallop also requires a close seat; while for the counter-moves and for jumping, grip is indispensable during the action, and should be in proportion to the violence of the shock.

RIDING IN THE PILLARS TO COMPLETE THE RIDER'S SEAT

Here, in fine, is what I advise the student at the riding-school: Give great weight to all the principles here set forth. Never miss a single lesson; for the riding-master has his *amour-propre* and will be the more interested in your progress if you try to show him by your regular attendance that you really desire to become a good horseman. Finally,

do not imagine that you have understood everything. Make sure for yourself and be convinced.

Such, then, are the means which the reasoned equitation offers toward obtaining a proper seat. The military schools still employ jumpers in the pillars. These are useful enough for suppling recruits, who have to be taught in the shortest possible time to stay in the saddle, no matter by what means. They are not applicable to civilians of every age; neither do they always produce fearlessness.

CHAPTER IV

THE WOMAN RIDER

For the many women nowadays who ride across saddle, all principles and methods are precisely the same as for men. This discussion, therefore, concerns only those who use the side-saddle.

A horse to be ridden by a woman should accord completely in color, conformation, temper, regularity of gaits, and safety, with the age, build, temperament, social position, and equestrian skill of the rider. It must, at the very least, be well broken, trained to the side-saddle, and wonted to every object commonly met in city or country. It should, in addition, possess two special qualities. The first is that it should go forward freely, without needing continually to be urged, and yet, at the same time, be restrained and directed without too much exertion on the rider's part. The second is that it should be absolutely sure-footed at all three gaits. A horse with a long, free, easy walk is preferable. One with any tendency to rear is quite out of the question.

It is by the correct simplicity of her dress, the firmness of hat and hair, that the horsewoman will make possible both her comfort and that elegance which, for the woman rider, takes the place of beauty.

TO MOUNT

A HORSE to be ridden by a woman must have been trained to stand absolutely quiet to be mounted, without the need of any second assistant. The rider stands at the left of the animal, facing forward. The right hand, resting on the second pommel of the saddle, holds the reins at the correct length for

CORRECT MANNER OF MOUNTING FOR A WOMAN

feeling the horse's mouth. The single assistant faces the rider, his right foot in front of his left, his body leaning forward and his left hand extended to receive the woman's left foot, while his right hand is either at her waist or just below her left shoulder.

The rider's left hand rests on the right shoulder of the assistant.

Thereupon, one or other of them counts — one, two, three; and at the last count the assistant lifts with his extended right leg, bringing forward the left foot beside the right, and supports the woman's weight. She, on her side, taking this support, raises herself, and pivoting sidewise, seats herself on the saddle, both knees to the left. She then removes her hand from the saddle fork, while at the same time the assistant, taking her right boot in his left hand, aids her in passing her right knee over this second fork. When the right foot is in place, he takes her left boot by the heel, turns forward the stirrup, and helps to set the foot in place. In the meantime the rider is adjusting her reins, holding them either with one hand or both. Last of all, the assistant helps with the complexities of elastics and straps, and hands the rider her whip.

All this must be done deliberately and precisely, without either abruptness or hesitation. If the rider's left boot is armed with a spur, she must warn her assistant.

Young pupils in the riding-schools commonly mount from a block. This is a mistake at the beginning, though well enough later, after they have learned to mount from the ground. The fault is that of the riding-master who neglects his duty as a teacher. Boys of fourteen should be taught to assist a lady in mounting; and I do not hesitate to

say that this knowledge is an essential part of good breeding.

Some masters advocate giving the right foot rather than the left, as more secure. I have tried out both ways, and find that it makes little difference. The main points are practice, and the skill and strength of the assistant, who must lift the rider without jolt, and with no thrust toward the rear, since this might tear her hand from the saddle fork, or even send her over backwards. The assistant does not toss the rider, but lifts her steadily, in exact time with the straightening of her knee, as if his hands were a step.

A horsewoman can, however, mount by herself, by lengthening her stirrup, and then, when seated, adjusting it again. She can also mount by aid of a stone, tree, fence, or other elevation. For all these, however, she must be assured of the temper and docility of her horse. I recommend all young riders to learn to mount alone. It is good practice, and often very useful both in hunting-field and on promenade.

TO DISMOUNT

To dismount, the rider stops her horse, takes all four reins in the right hand, removes her foot from the stirrup, raises her right knee from the saddle, and passes her right leg over to the left side, pivoting on the seat. Her right hand, still holding the reins, now rests on the second pommel. The

assistant, standing at the horse's left haunch, takes her left hand in his right, and aids her also with his own left, as she slips to the ground, still helped by her right hand on the second fork. An agile woman can dismount thus without assistance.

Dismounting, like mounting, should be done decisively, but without abruptness.

It is at the act of mounting that the horse first feels the ability of the rider, her confidence, and her skill. Baucher and Fillis always trained their horses before letting them be mounted by their women pupils. I myself often let mine begin with horses that have been merely broken; and I have always been successful.

THE HORSEWOMAN'S POSITION

THE woman rider, mounted, should carry her head straight and free, turning it easily in any direction without affecting the body.

The eyes look straight to the front between the horse's ears, and always in the direction in which the animal is going.

The body above the waist is erect and mobile. Below the waist, it is firm, but without being stiff.

The shoulders are well back and on the same line.

The arms fall naturally, the forearms are bent, and the elbows are held close to the body, but not stiffly.

The wrists are on the level of the elbows, and six inches apart.

Both hands hold the reins, the fingers firmly closed, the nails toward each other, and the thumbs extended along the reins.

CORRECT POSITION OF THE WOMAN ON HORSEBACK

The end of the rider's spine is perpendicular to the spine of the horse, and exactly in the middle of the saddle. This contact carries the weight, not only of the upper portion of the body, but also of the thighs and even of the legs below the knees. By the bearing of the end of the spine on the saddle, and by the contact of the inside of the right knee with the second fork and of the inside of the left thigh and knee with the saddle, the horsewoman balances the body and neutralizes the shock of the moving horse.

The right foot falls naturally on the saddle, the toe forward and somewhat down, the outside of the calf against the panel.

The left foot feels the stirrup, but does not lean

on it. The toe turns a little inward, just enough to prevent the left calf from pressing against the saddle, since this would tend to pull the entire body round to the left.

Further details of the woman rider's position may be found in my book, *The Horsewoman*, D. Appleton and Company, New York. This which I have here set forth is the accepted posture. It is easily acquired if the pupil begins young and practices certain calisthenic exercises on horseback. To have a good seat is to be able to retain this position, under all conditions, with the horse in motion. No woman, young or adult, can acquire such seat merely by reading any book. She needs in addition, the help of a teacher, one, moreover, of long experience.

CORRECT POSITION OF THE LEGS AND ARMS WHEN MOUNTED

The principles of the reasoned and of the scientific equitation are the same for women as for men, the woman rider's whip taking the place of the man's right leg.

CHAPTER V

THE AIDS

THE best procedure for the beginner would, no doubt, be to master all the details of seat, position, and the manipulation of the reins, while the horse is standing still. Few pupils, however, are at all willing to undertake any such patient labor. Young or adult, they want, not merely to walk, but to trot, before they have any idea what is to be done, either to direct or to control their mounts. My own experience is, therefore, that it is really better, on the whole, to let the beginner do, within reason, a good deal as he likes.

In the usual or lateral equitation, the rider possesses two aids or means of controlling the horse. These are the hands holding the reins and the calves of the legs, or in the case of the rider on a side-saddle, the left leg and the whip.

The effects of the hands are three:

By pulling straight back on the reins, the rider signals the horse to diminish the speed of its forward motion or to stop it completely.

By raising the hand vertically, the rider lifts the horse's head. The horse, in consequence, raises its front hand, and therefore, its front legs.

By drawing more strongly on either rein, the

horse's head is pulled to that side, and it tends to turn in that direction.

The rider's legs, on the other hand, have only one effect:

When both are pressed against the horse's flanks, they determine the action of its hind legs, since, to avoid the pressure, it advances the whole body. Either leg used alone pushes the horse to the opposite side.

If, then, the horse is standing still, the pressure of both the rider's legs starts it walking forward. If the horse is in motion, pressure with the right leg, accompanied by an increased pull on the right rein, turns the animal to the right, and *vice versa*. Such use of rein and leg on the same side constitutes the right or left lateral effect. The rein gives the direction to the front hand. The leg gives the impulse to the hind hand, which thereupon pushes forward in the direction indicated.

It is, however, most important always to bear in mind that such effect of hand and legs is always by means of an added pull on one rein and an added pressure of one leg, never by the diminished contact of rein or leg on the other side. The principle is that the effect of one rein or one leg, without the usual contact on the other side, will not alter the direction of the animal's forward motion, but will pivot him on the fixed spot. If, then, the horse is advancing, held to a straight line by, let us call it, two degrees of contact of reins and legs, and it is desired to turn

him to the right, the left hand and the left leg still maintain their two degrees of pressure, while at the same time, the right hand and the right leg increase theirs from two degrees to three and from three degrees to four. But as soon as the horse has made the required change of direction, right leg and right rein return to their former two degrees of effect, and give once more the straight line forward.

These effects are the same at trot and canter.

In the usual equitation, the rider remains upright in his saddle, except that the body inclines a little forward to cause the horse to advance, and inclines slightly backward for stopping and backing. In this sort of equitation, the horse is not maintained in any state of equilibrium, the location of its center of gravity is problematical, and therefore, the weight of the rider has little effect in governing its movements.

At the trot, the rider may either keep a close seat, or he may rise at each step, in what is called the English motion. But in either case, he has to sit close in order to use the pressure of his legs for changes of direction or of gait, or for other control. He can, indeed, turn his mount by the reins only, without using his legs; but the animal obeys only because it is willing. Without pressure of the legs, the rider cannot compel obedience.

As soon as the learner has acquired sufficient confidence and a firm seat, it is helpful exercise to practice jumping obstacles.

CHAPTER VI

THE GAITS

THE usual equitation regards the horse as an animated machine already adjusted to carrying the rider's weight at various gaits. Means of securing regularity of gait or of correcting irregularity belong to the rational equitation, and are quite outside the ordinary form.

The horse has three natural, or regular, gaits — the walk, the trot, and the run. He has, besides, two other irregular or artificial gaits, the amble and the single-foot, which are not natural to the animal, except where they are the result of special breeding or training.

The walk progresses by a succession of strides, in which the four limbs move two by two, diagonally. It is, therefore, said to be in "diagonal biped." In the fast walk, called by Newcastle, in French, *le pas relevé*, though the animal still keeps at all times three feet on the ground, the diagonal movement is no longer apparent.

The means for making a standing horse change to a walk are so various in the usual equitation, that it is not possible to touch upon any but the most commonly practiced, such as chirping with the tongue, the moderate use of the whip, advanc-

ing the bridle hand. Turning is brought about by the traction of one rein; stopping and backing, by pulling upon both.

If, when at the walk, the horse is urged to go faster, it breaks into the trot. The trot is like the walk, except that the diagonal action is more pronounced and more apparent, and that the feet are kept a shorter portion of the time on the ground. In trotting, the horse's spine at the haunches delivers a succession of shocks to the seat of the rider, who neutralizes them by rising from the saddle an instant before each blow. This device secures both comfort and exercise. Except for this, the conduct of the trot is the same as of the walk.

The fastest gait is the run. The action is a succession of leaps executed by the two sides of the body symmetrically, or, as it is called, in "lateral biped." A somewhat slower run is a gallop. A slower gallop is a canter.

If at the run, gallop, or canter the two legs on, let us say, the right side, gain more ground than the other two, the horse is said to run, gallop, or canter to the right, or, more simply, to lead to the right; and *vice versa*. But whenever a horse at run, gallop, or canter turns its course to either side, it has to lead with that side. Conversely, when the horse is urged to any of these gaits, and at the same time is compelled to turn to either side, it will, almost always, take the lead to the same side. Otherwise, these gaits are managed like the walk and trot.

Of the irregular gaits, the amble, widely esteemed in the days of the instinctive equitation, is still favored by the Cossacks of the Ukraine and Crimea, the Arabs, certain American Indians, by Mexicans, and in our own Southern States. A few unskillful riders, also, even in the more sophisti-

AMBLE

cated parts of the world, still prefer the comfort of the amble to the exhilaration of the trot.

In the amble, the horse, instead of striding with two diagonal members, as in the trot, advances together the two limbs on the same side. There is, therefore, no play at the coupling, no trajectory, and the rider is pushed alternately from side to side, instead of being propelled upward as in the trot.

So far as this gait is the result of training, it can be corrected, though with difficulty. But if it is hereditary, it can seldom be changed. I have myself had occasion, in the United States, to alter a good many amblers into trotters. My own method is by cavesson and breaking-strap, a tiresome device, but fairly quick and sure. The progression through the reasoned equitation is the best corrective; but this also is very tedious, since the work must be done, partly on foot, and partly mounted in place. Even then, if the horse is put to the trot and begins to amble, he must be stopped at once, lest he become confused and not understand what is asked of him.

The rack is between a walk and an amble. The four limbs advance by a lateral motion, slower than at the amble, faster and shorter than at the walk. But in order to do this, the muscles of neck, back, loins, and haunches have to be kept contracted, so that the entire vertebral column is held immobile. This is especially noticeable in the pelvic region and at the coupling. The hind hand receives no trajection as in the walk and trot. The rear limbs move below the croup without any lift-and-drop at each step. The sacral region remains rigid. The stride is short and quick.

The front legs are neither completely in lateral, nor yet completely in diagonal. Each reaches forward and returns supporting the load, a little in advance of the rear limb on the same side. But

the return of the feet is quicker than at the walk, and their beat is about equally spaced. In other words, at the regular walk there are heard two beats in diagonal; at the amble, three beats in lateral; at the rack, four beats in lateral.

The rack was much favored in ancient times, when there were no roads, when horses were ridden without saddle or bridle, and the best gait was the one which needed least skill and balance on the rider's part. It is now obsolete.

Single-foot is almost never taken by instinct, unless the animal suffers from atrophy, weakness, or fatigue. Occasionally, however, it is hereditary. In the latter case, the correction of the fault is nearly impossible and never permanent. If the gait is the result of training, as it is sometimes in Brittany, Mexico, and the western parts of the United States, it is best cured by cavesson and longe.

The action in single-foot is a slow trot in front, and a fast walk behind. It is exactly the movement of a horse thoroughly tired out by a long journey, which is nevertheless being urged forward by its rider. Such an animal, again rested, will return to his normal walk and trot.

The irregular or artificial gaits may be the result of training or of heredity.

The amble is the same the world over, though called amble in England, but rack, pace, or fox-trot in the United States. The word does not matter,

except that "pace," ambiguous in this sense, had better be kept to mean all the gaits of a horse, and not restricted to a particular one.

When a horse, already at a fast trot, is urged to move still more rapidly, so that action in diagonal

SINGLE-FOOT

biped becomes impossible, he may change to the amble. For this, he stiffens the spine, and replaces the up-and-down motion of the trot by an oscillation from side to side in lateral biped. Fore and hind legs on the same side advance together; but the motion is so rapid that the animal appears to the eye to be running with the hind legs and

trotting with the front. Curiously, certain ambling horses have been, on the track, faster than the fastest trotters.

In the single-foot, the hind legs move at a fast walk, while the fore legs execute a slow trot. Both these irregular gaits can be cured by the reasoned equitation, or by the cavesson and breaking-strap.

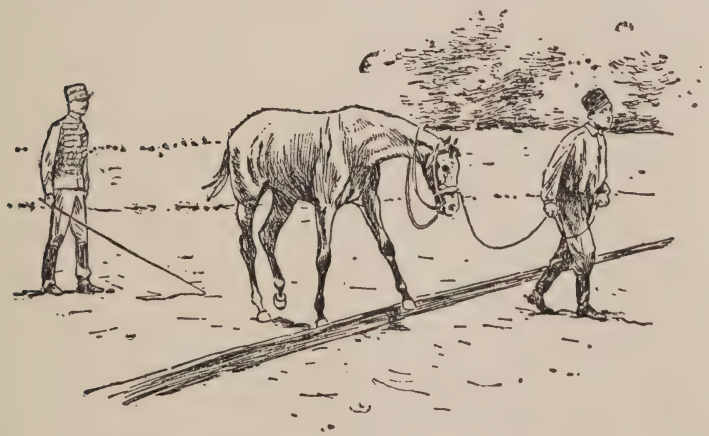
CHAPTER VII

JUMPING

THE first prerequisites in a horse that is to clear an obstacle properly are conformation, strength, and energy. Any horse, when free, will jump anything if frightened or pursued. But it has to be trained to jump at the rider's will and under his weight.

For this there are various methods, of which the following has proved by experience to be the best.

A bar of wood or a low hurdle is placed on the ground, and the horse, led by a man holding the



FIRST LESSON WITH THE LONGE

longe of the cavesson, and maintained always in a state of perfect calm and docility, is habituated to

passing this at a walk. When the animal has acquired confidence, the obstacle is raised progressively, the trainer following the horse and encouraging him by showing the long whip, not, however, striking, unless the horse actually refuses. Even in that case it is better not actually to strike, but only to swing the whip gently. Meanwhile, the man holding the longe must be careful not to hinder the horse from jumping, or to pull against it after it has passed the bar. As soon as the animal surmounts the barrier calmly, it should be recompensed by caresses or otherwise.

When the horse has learned to take the bar at a walk, it is practiced, progressively, at the gallop. Here, especially, is it essential not to excite the animal, nor to check it by the longe, either before or after the leap. For the horse in leaping has to develop a very great amount of muscular energy; and if the trainer hinders it in any way, or at any time asks too much of it, the horse fails to put forth sufficient energy, becomes disheartened, refuses, and tries to bolt.

After this training with the cavesson has proceeded far enough, the trainer mounts the horse, and proceeds once more with the same programme from the beginning.

From this point on, it must always be borne in mind that the horse clears the obstacle by its own act of will. Being trained to leap, it knows the right way to use its powers. The first essential for

the rider, therefore, is to let the horse alone, and not interfere with it by some wrong position in the saddle or some wrong effect of the reins. The important matter, then, is to gallop the horse straight at the obstacle, neither too fast nor too

THE HORSE, MOUNTED, LEAPS THE BAR DIRECTED BY THE LONGE

slow; to feel the contact of the bit and yet permit freedom to the head and neck, not holding them too high or too low; and not to try to lift the horse's front hand, but, on the contrary, to push it forward during the entire movement by the pressure of the rider's legs upon the horse's flanks near the girths. Meanwhile the rider is to sit firm in his saddle, his

body always perpendicular to the ground, his loins supple to neutralize the shock.

No other part of horsemanship has given rise to more theories than has jumping. For no two horses jump just alike, nor do any two men ride in precisely the same way. When, therefore, we consider

THE HORSE JUMPS THE OBSTACLE MOUNTED AND UNDER CONTROL OF THE RIDER

the different speeds, strides, and conformations of horses, with their differing energy, the special qualities of experience, seat, conformation, and tact of hand of riders, and the various conditions of ground, the excitement occasioned by the company, the variety in height, width, and stiffness of the obstacle to be passed, to say nothing of the tempo-

rary physical and moral dispositions of both rider and horse, it clearly becomes impossible to lay down any invariable rule that shall make every jump invariably like every other.

But after all is said, clearing an obstacle is largely a matter of confidence on the part of the

THE HORSE COMES SQUARELY TO THE OBSTACLE AND JUMPS FRANKLY

rider. A horse does not, of course, apprehend directly the rider's morale. But he does appreciate to the full the lack of confidence of a rider who, on coming to the jump, stiffens himself, shifts in his saddle, or pulls against his horse's mouth; and it is this lack of confidence, thus communicated to the horse, that causes the animal to hesitate, refuse, or bolt.

Successful training for the jump, in short, involves not only time and moderation, economy of physical and moral energy, attention to the animal's wind, a light weight increased progressively to the normal load to be carried, and frequent rests to avoid exhaustion. Not less essential are the trust of the horse in its own powers, its confidence in the rider, the confidence of the rider in his horse, and no undue interference with it.

NOTE ON FIGURES OF MANEGE

WHEN the horse is performing well at walk, trot, and gallop, there is often much benefit, before taking up the jump, in practicing certain of the so-called figures of manege, such as the double, the change of direction, the circle and figure eight, the volte and half-volte. These are taken progressively, first at the walk, then at the trot, then at the gallop.

In these movements, at the present stage of the rider's progress, the horse is kept to the straight line by means of the "lateral effect." Properly, however, this should be accomplished by the "diagonal effect," with which the ordinary rider is assumed not to be acquainted, and which he should not attempt to use until he has passed through the progressive training that belongs to this branch of equitation. The details of these figures are, therefore, included in the chapters on the scientific equitation.

PART II

THE REASONED EQUITATION

THE TRAINING OF THE SADDLE HORSE BY THE AID OF PRINCIPLES BASED ON THE EXPERIENCE OF MASTERS OF THE ART OF RIDING

CHAPTER VIII

THE REASONED EQUITATION

We owe the reasoned equitation largely to Baucher. Before his day, even in ancient times, men had, indeed, an idea of the need of the state of equilibrium on the part of the horse; and they had tried, unsuccessfully, to obtain this by various methods, often complicated, and involving series of movements and also mechanical devices. Baucher not only created a system for obtaining the state of equilibrium; in addition, in his *L'Equitation Raisonnée*, he set forth the principles on which the whole reasoned equitation is based.

These are in brief:

The state of equilibrium is not the result of any instincts of the horse; but, on the contrary, is imposed upon the horse by the rider, in the form of an increased muscular activity which the rider stimulates.

The horse, compelled to the state of equilibrium by the man, is itself in a state of complete submission, in which it cannot use its brute strength to resist its rider, but can nevertheless execute any natural movement with the least possible waste of energy.

The weight of the man, also in equilibrium upon

the horse's back, is borne with the least possible effort, and with an ease for which the animal is manifestly grateful to its master.

Now it is absolutely true that only as the result of training are the enormous powers of the horse brought under the man's intelligence, without violence and without physical or moral pain. The one is wise, the other is strong. The two form a friendly unit in which the brute is submissive and happy. But since the reasoned equitation follows a series of progressive exercises, in which the more advanced rest on those which precede, it is essential that the same rider use always the same horse, during the time necessary to complete its training.

A sound and well-conformed animal, energetic but good-tempered, will be the easiest to train. A full bridle should be employed, with a bit of medium power, a Baucher snaffle, curb chain, and lip strap. The work on foot requires a three-foot whip. Later in the training, when the horse is mounted, spurs will be needed. A well-kept second-hand English saddle is better than a new one.

Since the reasoned equitation has for its purpose to teach the rider both how to train his horse, and also how to ride a horse already trained in the system, it is useful for professional riding-masters and trainers, and for all civilians. But it is only after several years of the usual equitation that either the theory or the practice of the reasoned equitation becomes of any particular benefit. Bau-

cher wrote out his method primarily for cavalry officers and other professionals, and his principles are very complicated for an amateur to follow. I have, however, taught the reasoned equitation to a great number of amateur riders, both men and women. I have, in addition, simplified Baucher's theory and clarified his methods so that now the entire system is practical for amateur and professional alike.

CHAPTER IX

BREAKING IN

BREAKING in, for the young horse, involves acquaintance with the trainer, so that it will come to him and follow him without fear or anxiety, accept the bridle without reluctance, stand quietly for mounting and dismounting, walk, trot, and gallop under the rider's weight without nervous tension, turn to either side by the rein, stop and stand still. That these movements should all be done perfectly, is not, however, so important as that the horse should be docile and quiet.

This first portion of a horse's training does not need an experienced master. Any ordinary rider can manage it, provided only that he have perseverance, patience, kindness, love for the animal, and a sufficiently good seat to resist the exuberance of a young horse. For a young horse is like a child, ignorant, timid, anxious; and if the trainer is not indulgent, patient, and fond of the animal, sooner or later a little too much severity, the least touch of brutality, will reënforce this natural timidity, and produce restiveness and bad temper that the horse will never outgrow. Many a horse has been spoiled by unintelligent trainers. For the horse's memory is excellent, and very seldom does it forget harsh treatment.

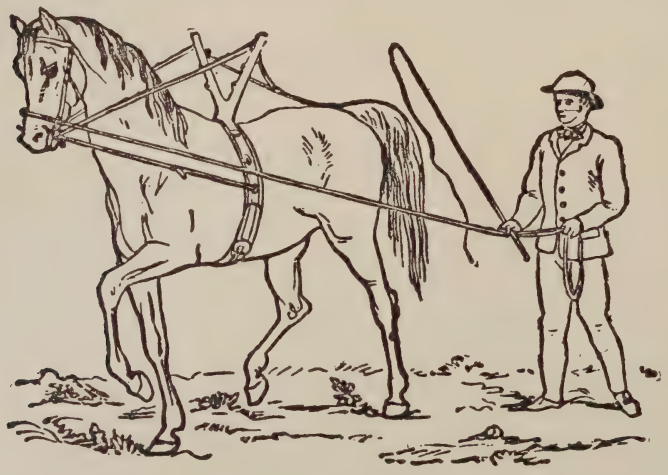
Baucher says, and I am of his opinion, that it needs uncommon discrimination on the part of an owner to pick the right man for breaking in a young horse. Indeed, to judge wisely the time required for the work, the state of progress of the young animal and its muscular development, to reward obedience suitably, and to punish with wise moderation, demand a judgment and an experience that come near to talent.

It is far easier to train a child than to reform a criminal: and it is the same with a young horse. But if the instructor lacks patience or kindness or experience, the child will revolt against his teachers, and the horse against its riders, and both will be permanently harmed. And since the breaking in is the beginning of a horse's education, the man who undertakes it can never have too much of each of these essential qualities.

During the breaking in, a single bridoon should be used, rather than a full bridle. The chain and bit produce too powerful an effect on the mouth of a young horse, and it will not understand. Moreover, they cannot be managed properly during the rearing, kicking, and buck-jumping to which young horses are addicted.

If the horse is nervous or violent, I employ the cavesson with the longe. The horse is saddled and bridled, the stirrups being raised against the saddle by a knot in the straps. The cavesson is put on over the bridle, the throat-latch tight enough to prevent

the cavesson from slipping and hurting the horse's eyes if the animal becomes violent. Around the saddle I buckle a surcingle, with two buckles and a little strap, to hold the reins when not in use, and to prevent their falling down in front of the animal's



DUMB-JOCKEY, USED FOR TRAINING THE HORSE TO ACCEPT CONTACT OF THE BITS AT THE DIFFERENT GAITS

legs. I have also two buckles on the headpiece of the cavesson; and two pairs of old reins, with holes at each end, equally spaced. One pair buckles to the cavesson and to the snaffle, the two sides just alike. The other ends of this pair fasten at the surcingle, the two reins of equal length. The second pair of reins attaches to the bit, without tension at first, but in due time fastened with the snaffle reins.

All these straps being adjusted, I take the end of

the longe in my left hand and back away to very nearly the full length, while an assistant holds the

FIRST LESSON WITH THE LONGE

horse's head. I stand at the center of the circle in which the horse is to travel, and show the long training whip, which I carry in my right hand. The assistant leads the horse a few steps around the circle to the left, then stops and caresses the animal on neck and head.

When in this way the horse has traveled an entire circumference, the assistant lets go the bridle, and takes the longe with his left hand about three feet from the head. While the assistant continues to caress the horse with his right hand, the trainer, still holding the longe in his left hand, encourages the horse to continue around the circle, by chirping the tongue and showing the whip near the horse's hind legs, but without actually striking. After a

few trials, the horse comprehends what is wanted, and goes forward at command. Thereupon, the assistant works progressively farther and farther along the longe away from the horse, until he lets go entirely.

As the horse learns to travel around the circle under control of the trainer, it must learn also to stop on the line, without turning its body inward or outward. For this, the trainer swings his left hand up and down, so as to give a succession of mild jerks on the longe; at the same time, the assistant walks slowly along the longe to the horse's head, while the trainer, in a clear and commanding voice, calls, Hoho, Hoho. Whoa! As the horse stops, the assistant caresses it. At first the animal will turn its haunches outward from the circle. After a few lessons, it will stop straight on the line.

The trainer should always stand still at the center of the circle, never following the horse, but compelling the horse to go round him, to walk, trot, and stop as indicated, but not to come to the trainer unless summoned by a pull on the longe.

An experienced trainer will very soon teach the horse to obey the whip. Shown near the flanks, it means to go to the right or left; at the hind hand, to go forward at the different gaits; in front of the face, to stop. Showing the whip straight, the lash upward, accompanied by a gentle tug on the longe, will bring the horse to the center. If the horse is then rewarded and caressed, the sight of the whip

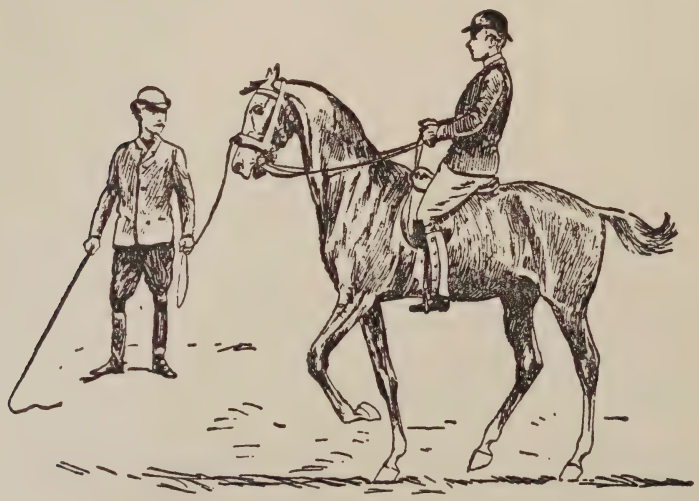
held vertically will alone be sufficient without the pull on the longe.

At the beginning of this work, the reins should not be at all tight. It is, however, impossible to lay down any rules as to their precise tension. An experienced trainer judges, by the animal's temper, conformation, energy, length of neck, and sensibility of mouth, what the effect of the bits will be. In fact, an experienced trainer could fill ten volumes with accounts of the diversities among horses and the various difficulties that he has encountered and overcome. Something less than this, however, confined to principles and method, will better please the publisher and hearten the reader.

Three months is sufficient, by this method, for breaking a horse to the lateral equitation. But if the horse is mounted from the beginning, it will take at least a year, often longer.

When the young animal has made sufficient progress with longe and breaking-strap, the surcingle is removed, and the horse, standing still, is mounted and dismounted by the assistant, the trainer meanwhile holding the longe near the head. After this, the assistant being mounted, the trainer sends the horse around the circle as before, walking, stopping, trotting, cantering, while the assistant, under the direction of the trainer, applies the proper effects of legs and bridle. All this should be done both to the right and to the left, as explained in the discussion of figures of manege.

As soon as the horse has become calm and obedient while the hands of the assistant feel a gentle contact with the mouth through the rein, the cavesson likewise is removed; and the trainer, now mounting for himself, begins progressive work



LESSON, MOUNTED, WITH THE LONGE

upon the several gaits, first on a straight line, afterwards at the figures of manege, but always, without exception, by means of the lateral effects,

It is best, when possible, to keep the horse for a year at the breaking in and the lateral effects, before going on to the reasoned equitation. By that time horse and trainer better know one another, the horse is stronger, steadier, and better able to profit by the suppling of the flexions. Moreover, the young or inexperienced trainer is very likely to

push his horse's education too hard, and to neglect some items which do not seem important to him. The result is that there comes a time when the trainer has to go back and pick up these neglected elements.

Often, too, it happens that a horse, well trained by a master, is ridden by some one without equestrian tact, and has to go back to the master to be retrained. Sometimes, also, a man buys a horse which has already been ridden, but in accordance with some other method than his own; and since the memory of the horse is very persistent, the training may have to be started over again from the foundation.

In all these cases the trainer needs to be experienced, patient, persevering, energetic, and positive, besides having a genuine affection for his pupil. No two horses are alike in conformation or morale, nor in the results of their first contact with man. The trainer needs, therefore, to diagnose his animal, to consider his strong and weak points, so as to pick the right place for the training to begin. If, for example, a horse is anxious and timid, before I do anything else, I give it confidence, by means of work on foot with the whip. If it is young and not strong. I develop its muscles by means of the cavesson with the Bussigny breaking-straps.

One ought, in a word, to study his horse, find out its special needs, and commence the education by removing the causes of its imperfections. Meth-

odists, as a whole, are too sure of their general principles. They want to have every horse put through the hard-and-fast progression of their particular method. But my experience is that each individual horse has its own physical and moral disposition, and that each needs its own special treatment and training.

This much, at any rate, is certain: no matter how the horse's education commences or proceeds, the earlier portions of it will need more care, more ability, and more experience on the part of the trainer than the later ones. I am, then, fully agreed with Baucher in his criticism of owners who give young horses to their stable grooms to train. And yet, in Baucher's time, equitation was in high esteem. Whereas now horsemanship is almost a lost art, and riding is thought of merely as a wholesome exercise.

CHAPTER X

REWARDS AND PUNISHMENTS

CARESSES and other rewards are the first means by which the trainer makes the horse understand that it has nothing to fear when under control. A horse is by nature timid and anxious; the first step in its training is to give it confidence and to make it understand that it will meet no ill usage. When that is accomplished, the horse is tamed. As yet, however, it knows nothing. Its education advances by means of rewards when it does well, and by punishments when it fails to do something that it has already been taught.

Caressing may be done with the hand alone, or with the voice, or by the two in conjunction. Early in the training, it is better to employ both together, so that each may help to make the other understood. After the horse gets the idea, it is better to use only one at a time.

When the man is on foot, he commonly caresses the horse by passing his hand over the forehead below the forelock, always in the direction of the hair. But the horse should become accustomed to caressing on other parts of the body — neck, shoulders, loins, abdomen, haunches, and legs. The fingers should be extended and the full hand used, not

merely the finger-tips. The horse is thankful for a generous caress with heart in it.

On the other hand, the horse should not be slapped too strongly. A nervous animal, especially, is likely to interpret this as a reproof.

Caressing by the voice is entirely a matter of softness of tone. The animal has no idea whatever of the meaning of the words.

With the horse in motion, whether walking, trotting, or galloping, whenever the rider feels it becoming anxious at the sight of some object or at some noise, or hesitating before an obstacle to be cleared, he commonly employs the voice to quiet or encourage the animal, since the hands are busy with the reins. But standing still, or whenever, in motion, the rider can manage the reins with one hand, the free hand should caress the particular part of the body which has obeyed the rider's signals or been the chief factor in the movement. If the neck has played the leading part, caress the neck. If the croup, caress the haunches or loins. By this means the horse is trained to associate the aids and signals of the rider with the part of the body which is to carry out the command.

In general, a reward given during the act of obedience is more effective than one administered later. It is, therefore, often wise to repeat a movement, already executed correctly, for the sake of giving the caress during the actual performance. But after a difficult movement, well performed, it

is often best to dismount, take off the bridle, give a carrot, an apple, or a piece of sugar, and dismiss the pupil to the stable.

Punishments, in the horse's education, are no less important than rewards. These ought always to be administered fairly and justly, with decision, but without impatience, calmly and with self-restraint, and with a sentiment of regretful loyalty on the part of the man.

The means of correction are four: the spurs (to be discussed later), the whip, the voice, and the hand. The whip is especially effective. It is used with sharp but not severe stroke, upon any part of the body, but never on the head. After the training has made some progress, the effect of the whip is augmented if, along with the stroke, the trainer speaks in a sharp, guttural tone. A man working his horse on foot can make a strong impression by looking the animal straight in the eyes, with a severe countenance, while he speaks harshly with the voice. After this, the whip may be suppressed, and the rebuke given by a severe slap of the hand, accompanied by the threatening tone. The same method may then be used mounted.

When the horse has learned to expect punishment when it misbehaves and rewards when it does well, and to trust its rider always, it is well on the road of a progressive and thorough education.

CHAPTER XI

THE FIRST WORK ON FOOT

THE breaking in has for its object merely to accustom the young horse to the feeling of harness, girths, and saddle, and to the beginnings of control by the trainer. The early work on foot is but a continuation of the breaking in. Its object is to lead the green animal to understand the various contacts and effects, of which, of course, he is, at the beginning, completely ignorant. By this preliminary work on foot, we educate the horse to submit to the contact of the bits, which at first cause an anxiety which must be completely overcome.

The horse, saddled and bridled, is led to the spot selected for the first lesson. The stirrups are raised on the saddle, and the snaffle reins are passed forward over the head, and held in the left hand of the trainer, who stands in front facing the animal, the whip in his right hand. The man speaks soothingly, exhibits the whip, and with it caresses the horse's forehead, nostrils, ears, and both sides of the neck. (Figure 1.)

At first, the horse will be uneasy. But shortly he becomes calm, finding that no pain follows the touch of the whip, and encouraged by the man's voice and his complete immobility. Thereupon, the

Figure 1. THE HORSE SEES AND FEELS THE WHIP WITHOUT FEAR

Figure 2. CONTACT OF THE BITS WITH THE MOUTH BY THE WHIP ON THE FLANK

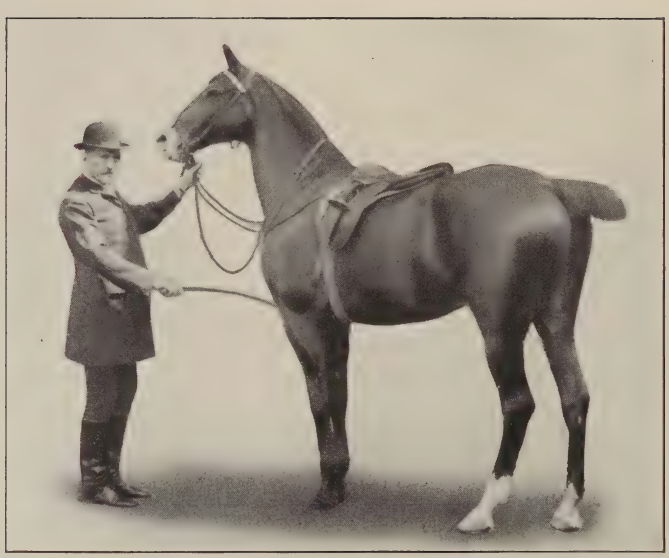


Figure 3. CONTACT OF THE BITS WITH THE MOUTH BY THE WHIP UPON THE CHEST

trainer raises the whip, and stepping backward, he pulls lightly on the two snaffle reins. When, by this means, the trainer obtains two or three forward steps, he immediately caresses the animal by voice and hand. After a few days of this training, the horse will, of its own accord, advance toward its master as soon as the whip is lifted to the height of its head. As soon as this happens, the pupil should be caressed with the whip on shoulder, chest, croup, and all four legs.

When the horse no longer has the slightest fear of man or whip, the time has come to teach the animal to move forward in response to other effects. The trainer, facing forward, stands at the horse's left shoulder. In his right hand he holds the two snaffle reins, three inches from the horse's chin; and in his left hand he carries the whip, the lash behind and near the horse's flank. In this position he impels the horse to walk forward by light touches of the whip on the flanks near the girths. (Figure 2.)

At this point the horse will sometimes hesitate, or even try to back. But the trainer, remaining always calm, encourages the animal with his voice, which the horse already knows. By drawing forward steadily with his right hand, he should always succeed in obtaining a few forward steps. These, if well recompensed by caresses, will very soon be followed by more at the same signal.

If the horse manifests irritability or violence, the trainer should pass the snaffle reins forward over its

head, and while holding them with the right hand near the chin as before, he should also take them near their ends with his left hand, which holds the whip. If, then, any violent movement of the horse forces the trainer to let go the reins with his right hand, he still has the other grip to fall back on.

As soon as the horse advances readily and takes the contact of the snaffle bit against the lower jaw, the training is to be repeated from the other side. When the contact is accepted freely with the snaffle, the same course is repeated with the bit. In this case the little finger of the left hand separates the two reins of the bit, and the ends of these reins leave the hand between the forefinger and the thumb. The snaffle reins, on the contrary, enter the hand between the forefinger and the thumb, and pass out at the little finger. All five digits close upon the four reins.

From this position the trainer urges the horse forward with the whip, as before, against the snaffle. Then, when the horse is moving, he substitutes the contact of the snaffle for that of the bit, by bending the wrist to carry the thumb forward and the little finger backward. This movement of the hand must be done very gently and carefully. When the contact can be made with the trainer on the left side, the same operation must be repeated from the right, with everything reversed.

This procedure is advocated by Fillis, who holds that the whip, acting upon the flank, will help to

make the horse understand the action of the rider's legs, at the later stage when the animal is mounted. In this, Fillis is essentially right.

Baucher's practice is somewhat different. He faces the horse, taking, at first, the two snaffle reins in his left hand, and later, bit reins and snaffle reins alternately. With the whip, held in his right hand, he makes light touches on the horse's chest. The horse, thereupon, backs. But as the touches continue, the horse, finding backing of no avail, decides to go forward. It is thereupon rewarded with caresses, until, very shortly, merely showing the whip near the chest will obtain forward movement and contact with the bits. (Figure 3.)

CHAPTER XII

THE FLEXIONS

THE horse, when not under the control of the man, balances himself instinctively by different positions of head and neck. But the horse under control has these various positions given to him by his rider, by way of the bits. But the feeling of the bits in his mouth is disagreeable to the horse. The result is a tendency to contract and to keep tense the muscles which close the lower jaw, on which the bits rest. This disagreeable sensation tends, moreover, to affect the entire body, and to produce a general condition of contraction, opposition, and refusal.

The object of the flexions is, by means of certain graduated exercises, to teach the horse that no real pain will follow these uncomfortable sensations, and to suppress their general accompaniments, while accustoming the animal to obey their special effects.

The hands holding the reins can, by different positions and manipulations, produce on the animal mechanism a great variety of effects, of which the three principal are, directing, raising, and maintaining. The work of the flexions will introduce the horse to these different effects, which later, after the rider is mounted, will be further complicated by the effects of the legs.

A brief consideration of the bones, joints, and muscles involved in the flexions will help in avoiding certain mistakes.

The bars, on which rest the bits, are the distal part of the lower jaw, between the molar teeth and the incisors. In conformation they are of three types. In one sort the bone is small, and covered by a thin mucous membrane. Such bars are said to be "sharp," and are especially sensitive to the pressure of the bits. Another sort has a large bone, somewhat flattened where it meets the bits, and covered with thick mucous membrane. This sort is commonly little sensitive, and is described as "fleshy." The best type of bar is intermediate between the two.

The temporo-maxillary articulation which connects the lower jaw with the skull lies between the ears and the eyes, just behind the frontal bone. It allows the jaw, moved by the *digastricus*, *masseter*, and *temporalis* muscles, to open and shut, to move laterally for mastication, and to glide back and forth. This joint plays an important part in equitation.

Another important set of bones are the vertebræ of the neck. The first cervical vertebra, the atlas, articulates with the occipital bone of the skull. Next to it comes the axis. These two vertebræ form the atlo-axoid articulation which permits the head to rotate upon the axis, this remaining fixed. The occipito-atloid articulation, on the other

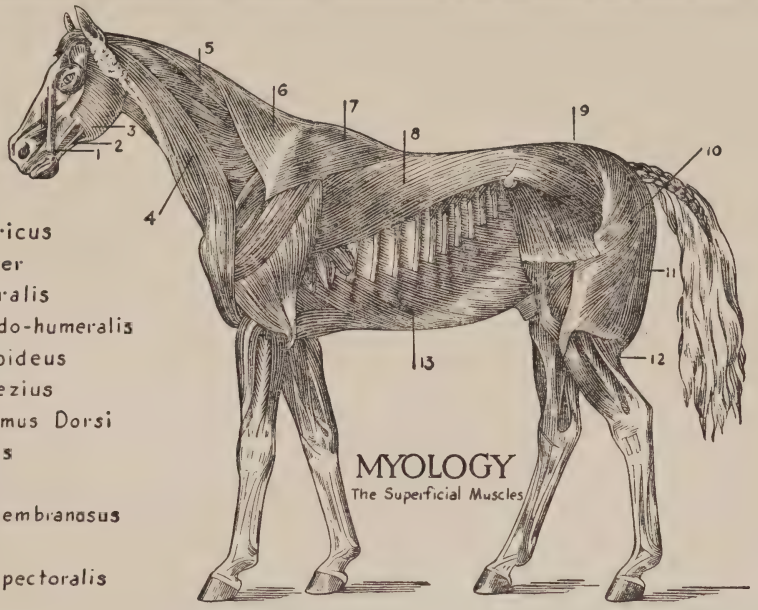
ARTHROLOGY

ARTICULATIONS OF THE HIND-HAND

1. Coupling
2. Pelvic
3. Coxo-femoral
4. Femoro-tibial
5. Tarsal

ARTICULATIONS OF THE FOREHAND

1. Bars
2. Temporo-maxillary
3. Atlo-axoid
4. Occipito-atloid
5. Cervical vertebrae
6. Spinal column
7. Scapulo humeral
8. Humero-radial
9. Radio-carpal
10. Metacarpal


1 Digastricus
2. Masseter
3. Temporalis
4. Mastoido-humeralis
5. Rhomboideus
6,7. Trapezius
8. Latissimus Dorsi
9. Gluteus
10. Iliacus
11. Semi-membranosus
12. Vastus
13. Great pectoralis
MYOLOGY
The Superficial Muscles

hand, permits four motions, extension, flexion, lateral inclination, and circumduction. Its movements are given by the muscles of the neck, *obliquus capitis*, *sterno-maxillaris*, *rectus capitis*, *scalenus*, *longus coli*, *splenius*, and *angularis scapulæ*. All these muscles are either attached or related to the three other muscles which work the lower jaw. They are, therefore, most intimately concerned in the position which is given to the head and neck, through the sensation of the bits on the bars. It is the position of the head and neck which is the object of the flexions.

Two other especially powerful muscles of the neck are concerned primarily with locomotion. The *rhomboideus* is connected at the atlas region with the other muscles of the head and neck; but when this atlas region is fixed, it draws the shoulder forward and upward. It is, therefore, related to the *scapulo-angularis* and *latissimus dorsi* of the chest. The other large muscle, the *mastoido-humeralis*, has also one of its ends at the atlas region, and the other at the shoulder and chest. When the atlas region is fixed, at the same time that the *rhomboideus* lifts the fore leg, the *mastoido-humeralis* carries it forward. But if the chest region is the fixed point, this muscle draws the head and neck to one side. It is by means of the flexions that we obtain for these two muscles the fixed point in the atlas region. When the horse accepts contact of the bits on the bars, the rider controls directly the muscles of the head, and

indirectly those of the neck. Thus by the continual communication of this indirect effect, which in its turn, emanates from the first direct effect of the bits on the bars, the rider controls also the action of the front limbs.

Here, then, is the theory of so much of the animal mechanism as is exercised by the flexions. I urge the trainer, at this point, to regard as essential the character of the flexion obtained by his work, rather than its amount. The important matter is not that the horse shall bend its neck more or less readily, but that it shall respond with head and neck to the tension of the reins; that it does not cease this tension of its own will, but while keeping the contact of the bits, shall obey this tension consistently.

It is desirable for the horse's education, not to commence this work of the flexions unless there is to be time to complete it. Further consideration of the bones, joints, and muscles involved in locomotion will be found under the caption, "Legs and Their Effects," the same illustrations serving for fore hand, trunk, and hind hand.

The masters of equitation before Baucher had already employed a system of flexions for suppling the neck; but they failed to recognize the importance of a further suppling of the mouth. Baucher, in his reasoned equitation, saw the need of suppling the mouth also, and developed a series of flexions for both the mouth and the neck.

Fillis objects to the execution of Baucher's flexions on the ground that he bends the neck at the region of the third vertebra and not at the atlas region. The series of flexions by Baucher is very complicated, those of Fillis are very strenuous; the two are difficult of execution for a young trainer.

To remedy these difficulties, I have created a series of flexions similar as to object to those of the two grand masters, but more easy of execution and sufficiently comprehensive for the trainer and the horse. The first condition, *sine qua non*, is to teach the horse to sustain the head and neck high up, by its own effort and without the help of the trainer. To obtain this result, the trainer places himself facing the head of the horse, holding the left snaffle rein in his right hand and the right rein in his left. By raising his two hands straight upwards, not backward or forward, the horse will raise head and neck. (Figure 4.) When the head and neck are up, the trainer opens the fingers of the two hands maintained at the same height; but if the horse drops its head or neck, the trainer shuts his fingers quickly. The flexion is complete only when the horse holds the head up without help. (Figure 5.) It then becomes a question of obtaining the flexion of the mouth without letting the head change the high position. For this flexion, the trainer, facing the head and neck from the left, and holding the right rein of the bit in his right hand and the left rein in his left, causes a pressure on the right bar by

Figure 4. FLEXION FOR BRINGING UP THE HEAD AND NECK AND MAKING THE HORSE LIGHT

Figure 5. THE HORSE LIGHT IN HAND

Figure 6. FLEXION OF THE LOWER JAW TO THE RIGHT BY THE CURB BIT

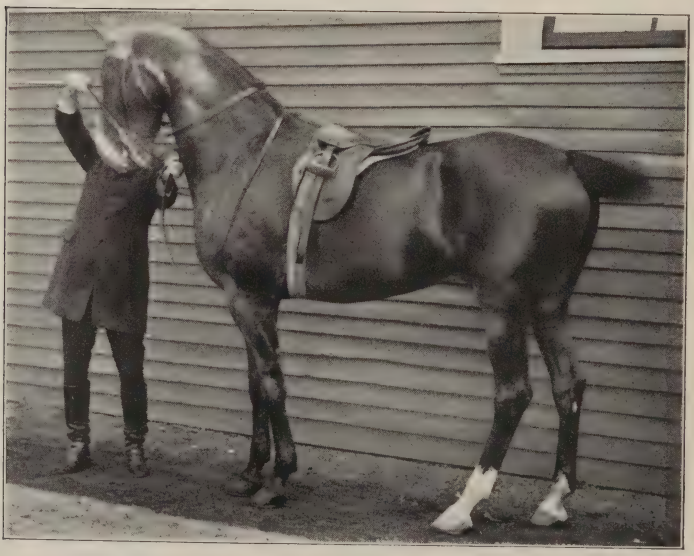


Figure 7. COMPLETION OF THE DIRECT FLEXION

the right hand, which, acting progressively, forces the horse to open its mouth. The head is slightly inclined to the right, but sustained high, the slightest derangement of the head or neck being corrected by the left rein held in the left hand, which is carried upward, downward, forward, to the right or to the left, according to the effect necessary to correct the false position taken by the head or neck in resisting or preventing the proper position and flexion. (Figure 6.)

When the depression of the lower jaw is obtained, the head being lightly inclined to the right, the trainer, by carrying his left hand progressively backward, places the head straight, always continuing the flexion of the mouth. When the head and neck are inclined to the right or to the left, the flexion is called the right or left lateral flexion. The flexion is called direct when the head and neck are straight. The two lateral flexions are only the means for obtaining the direct flexion, which is only complete when the horse depresses its lower jaw. (Figure 7.) The effect of the bits upon the mouth and neck produces a cause and effect. The mouth refuses because the neck resists, the neck refuses because the mouth resists. This difficulty is found in the different conformations, and to obviate it, the alternate flexions of mouth and neck are the proper work.

For the flexions of the neck, the trainer places himself on the horse's left side near the head, takes

the right rein of the bit with his right hand and the left rein of the snaffle with his left hand. The flexion of the mouth is obtained by the right rein and the flexion of the neck by the left hand carried to the right over the nostrils of the horse. (Figure 8.) The lateral flexion of the neck is complete when the head is turned facing to the right. After the lateral flexion of the neck, the head is to return to the direct flexion, by the rein or reins of the snaffle. If the horse has a thick, short, and fleshy neck, it is proper to enforce more bending from the neck. For that purpose the trainer places himself on the right side of the horse for the lateral flexion to the left, holds the right rein of the snaffle in the right hand and the left rein in the left hand. The left rein, bearing upon the neck, is kept at the same tension by the left hand, assuming that the right hand allows the head to flex to the left and follows the head in its flexion backward, so that, by raising the right hand, the head is maintained perpendicular and flexed at the atlas. (Figure 9.)

This position of the head flexed perpendicularly has to be obtained by moderate progress, passing from the position in Figure 9 to that shown in Figure 10, and finally to that obtained by the bit alone in Figure 11.

After arriving at this stage, the trainer continues the direct flexion of mouth and neck. The two reins of the bit are held in the left hand, and the two reins of the snaffle in the right, the forefingers

Figure 8. FLEXION OF NECK AND LOWER JAW BY THE CURB BIT

Figure 9. FLEXION OF NECK AND MOUTH BY THE SNAFFLE REINS

Figure 10. FLEXION OF THE LOWER JAW BY THE CURB BIT AND OF THE NECK BY THE SNAFFLE REINS

Figure 11. FLEXION OF THE NECK BY THE SNAFFLE AND OF THE LOWER JAW BY THE CURB BIT

between each pair of reins. The left hand operates a progressive but continual tension upon the bit, while the right hand corrects with the snaffle the false position possible at the beginning and thus secures the flexion at the atlas only. (Figure 12.) The flexion is completed when the mouth is open.

Finally, to obtain proof of the quality of my work of flexions, the horse straight, the head up and light, and yet in contact with my hands, I place myself facing the horse, the left reins of snaffle and bit in my right hand, the right reins in my left hand, and by a progressive and moderate action of my two hands, I obtain the direct flexion of mouth and neck, the horse keeping the same position of body. (Figure 13.) At the completion of the flexion, the horse is upon the hand, with the lower jaw completely depressed. (Figure 14.) The flexions have to be executed equally to the right and to the left by the same principles, but by the opposite means.

In explaining above the principles of the flexions, I have changed sides several times in order to make it possible for the photographer to reproduce on the plate the position of hands, reins, head, and neck, so they will be more apparent to the reader.

The next step is to secure lightness. The trainer stands facing his horse, with the right snaffle rein in his left hand, and the left rein in his right. By repeated vibrations he raises progressively the head and neck, until, after a few lessons, the horse re-

mains straight and still, head and neck elevated, without the help of snaffle or bit.

As soon as this position of lightness is obtained, comes the flexions of the jaw. The trainer, holding as before the two snaffle reins, makes very light oppositions, but without allowing the head or neck to drop. Now begins the "fingering." By this I mean the repeated, rhythmic opening and shutting of the mouth: mouth shut, bit contact, fingers closed on the reins; then mouth open and fingers unclosed, the hand always at the same height.

When the lower jaw is depressed squarely at the effect of the snaffle, the trainer repeats the same exercise, holding in each hand a rein of the snaffle and one of the bit. The snaffle maintains the position of head and neck, while the bit controls the depression of the jaw. But the effect of the two, especially of the snaffle, is peculiarly upon the atlo-axoid articulation.

But while this flexion is the most important of all, it is nevertheless so entirely at the atlo-axoid joint that the *rhomboideus* and *mastoido-humeralis* muscles are so completely contracted that they do not, in this condition, gain the development which is desirable and which is so noticeable in the neck of "Why-Not."

For all this work, especially, I recommend patience, perseverance, and slow advance. What counts for the future is the quality of the performance. The quantity is a small and temporary matter.

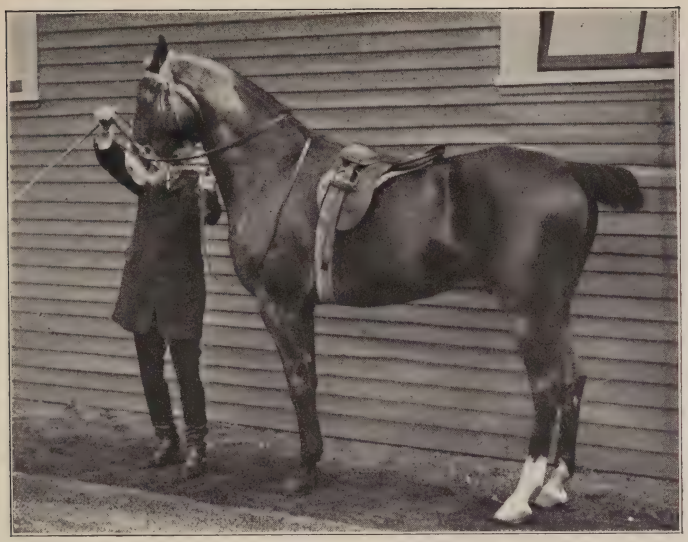


Figure 12. DIRECT FLEXION OF THE LOWER JAW BY THE CURB BIT AND OF THE NECK BY THE SNAFFLE REINS

Figure 13. DIRECT FLEXION OF NECK AND LOWER JAW WITH LIGHTNESS OF THE FRONT HAND

Figure 14. DIRECT FLEXION OF MOUTH AND NECK BY THE SNAFFLE ONLY

The series given above is sufficient to teach the rider the manipulation of the reins, and to train the horse to yield by mouth and neck to the effects of the bits. Many other flexions have been worked out by methodists to meet special difficulties of conformation and temper. But such a variety of cases is outside the limits of this book. Those which have been given, done first on foot and then mounted, are quite sufficient for suppling neck and mouth.

CHAPTER XIII

BACKING AND THE PIROUETTES

THE pirouettes are revolutions of one end of the horse's body about the other. In the direct pirouette, the hind feet remain in place, while the fore feet circle around them, either to the right or to the left. In the reversed pirouette, called rotation by the new school, the shoulders are the fixed point and the haunches turn around them.

The reversed pirouette is the first movement of the reasoned equitation. It is also the most important, since on its correct and symmetrical execution the entire education depends. It has, moreover, three stages: the reversed pirouette in lateral, which belongs to the lateral equitation; the direct rotation, which belongs to the reasoned equitation; and that in diagonal, which belongs to the scientific equitation. The three terms, lateral, direct, and diagonal, refer to the lateral, direct, and diagonal effects by which the movement is obtained.

The first step in the horse's education is, of course, the position of "in hand"; which has already been considered in the account of the flexions, and will be discussed still further in Chapter XXII. Up to this point the horse has been trained to take the position given by the rider's hand while standing

still. It does not yet understand how to move its weight on its feet, and at the same time, to remain in hand. The grand masters have, therefore, spoken of the direct and reversed pirouettes as the mobilization, respectively, of the front and hind hands.

THE REVERSED PIROUETTE

If the horse has been given the work with the trainer on foot, already described, the reversed pirouette should also be taught on foot. If the training is done in a manege, the animal should be in the center of the ring. I shall discuss first the reversed pirouette in lateral from right to left.

The trainer stands on the horse's right, between head and shoulder. The right hand holds three reins, two from the bit, with the little finger between them, and the right snaffle rein, which passes from the thumb to the little finger. But the snaffle rein is held shorter than the rest. The whip is held in the left hand, with the lash near the horse's right flank.

By means of the reins from the bit, the trainer holds the horse in hand, and at the same time, with the snaffle rein, he obtains a partial lateral flexion to the right. He calms the animal by his voice, and still keeping the "in hand," he keeps touching the right flank lightly with the whip.

Commonly, at this, the horse will either back or raise the right hind leg. If the horse backs, the

trainer will correct the fault by carrying forward the reins. But if the horse merely lifts the right hind leg, showing neither fear nor impatience, then the trainer is satisfied and rewards the action with caresses. After a brief relaxation, the action is repeated from the beginning.

Sooner or later, however, the animal, instead of merely lifting the right foot, will, in addition, carry it to the left, under the body, and set it down more or less in front of the left foot. In that position, before the right hind foot can be lifted again, the left hind foot must also gain ground leftward. (Figure 15.)

This is the first step of the reversed pirouette, the beginning of the mobilization of the hind hand. In a short while, the horse comes to understand that when its right flank is touched with the whip, it is to lift the right foot and step toward the left. After the first step, the second, third, and fourth are readily obtained in the same way. Four such steps, done in proper cadence, are enough. More will disturb the support of the front legs, and will distress the horse, since they are against its natural conformation.

Meanwhile, of course, the horse will have lost the "in hand" position. The only remedy is patience, perseverance, and quality of work. You, Master, are the instructor. You are teaching to your pupil the alphabet of locomotion. On this foundation, your pupil may, in time, become a most

Figure 15. ROTATION OF THE CROUP WITH DIRECT FLEXION OF NECK AND JAW

Figure 16. ROTATION OF THE CROUP WITH DIAGONAL FLEXION OF NECK AND JAW

uncommon animal. Do not forget that your whip has still to be replaced by legs and spurs. So do not hurry. Take ample time, remembering that the more time you take at this stage, while still maintaining the quality of your work, the faster progress you will make in the end.

When the lateral rotation is thoroughly mastered to the left, everything is reversed and the movement made toward the right.

In the reversed pirouette, as also in the passage, the trainer must not, under any condition, allow the horse to begin the movement by stepping off with the hind leg on the side toward which the motion is to be made. If, for example, the step is to be toward the left, the right hind foot must first cross over in front of the left. After that, the left foot steps still farther to the left. But the left foot must never move first. In other words, the legs always cross, never straddle.

I cannot insist too strongly on this point. Baucher followed and taught the opposite method, and it gave rise to much confusion in his principles. Moreover, it occasioned terrible fights against horses trained by him, which became confused by the effects of the legs.

When the reversed pirouette is correctly executed in lateral, it can next be readily obtained with the direct flexion of "in hand." For this, the pull on one snaffle rein is suppressed, and the horse's head and neck are held straight, while the four steps of

the movement are asked by means of the whip. (Figure 16.)

The reversed pirouette in diagonal belongs to the scientific equitation, and will be taken up with that subject.

THE DIRECT PIROUETTE

The direct pirouette, usually termed simply the pirouette, is the first movement for mobilizing the front hand. Assuming for convenience of description that the movement is toward the left, the action is as follows:

The left hind leg becomes the chief support of the hind hand, while the right hind foot, as in the reversed pirouette, passes in front of it to the left. Then, in its turn, the left rear foot, without in the least altering its place on the ground, turns on the same spot to face in the new direction. These two alternate, the right foot really stepping round the left.

Meanwhile, the right fore foot passes in front of the left, thus crossing the fore legs. As soon as this has taken the weight, the left fore foot moves off to the left, and restores the first relation. In this manner the fore hand walks round the left hind foot. For movement in the other direction, everything is, of course, reversed.

To obtain this pirouette to the left, the trainer stands on the horse's right side, as for the reversed pirouette, facing to the rear. In his right hand he

holds the two snaffle reins close behind the chin. The whip is in his left hand, lash near the horse's flank.

The horse being held straight and "in hand," the trainer, with his right hand, pushes the animal's head straight to the left, while, at the same time, by means of the whip, he checks the natural movement of the haunches toward the right. Thus, by pushing the fore hand round in one direction, and at the same time preventing the hind hand from circling after it, the trainer soon obtains the first step of the pirouette. Then follows the usual pause and caressing; and shortly, the animal learns to complete the action. After this, the direction is reversed.

BACKING

THE pirouette has now taught the horse to mobilize the fore hand. The reversed pirouette or revolution has taken care of the hind hand. There still remains the mobilization of the entire length of the spine, from the atlas region to the last of the sacral vertebræ. While this remains straight and rigid, correct locomotion is not possible.

Flexion of the spine hinges on the "coupling" between the last dorsal vertebra and the first sacral, which has to bend with each step forward, sidewise, or backward. Unfortunately, this articulation tends to become ankylosed with advancing age, and even in a young animal the unnatural load of

the rider tends to stiffen the joint. Both causes interfere with free movement, and occasion kicking, rearing, and buck-jumping.

It is, therefore, essential, during the work on foot, to complete the mobilization of the entire body by exercise in backing to supple the coupling.

Some authors advise, for this purpose, having the trainer stand in front of the horse, facing it, and with one rein in each hand, either of bit or snaffle, pushing the animal backward by "sawing" back and forth on the bridle. Fillis advocates having the man, in addition, step on the horse's feet, first on one, then on the other, as the sawing goes on.

But how, I ask, is the horse to understand that it is to flex its spinal column, just because somebody saws its mouth or walks on its feet? I myself proceed in quite a different manner. I put my horse straight, right side near a wall, "at left hand," as it is called. I stand at the shoulder, whip in my right hand, snaffle reins in my left. With the whip, I touch the back close behind the saddle, repeating several times, very gently, never at all violently or severely. Meanwhile, I pull lightly on the snaffle reins. Commonly, within two minutes, the horse lifts one hind foot. If at this moment I pull on the reins, I hinder with my left hand the movement forward of this leg, which will at once be carried backward. The diagonal front leg will at once follow, and I have obtained the first step. Caress-

ings on the croup with the right hand, accompanied by the voice, soon make the horse comprehend what is desired. A single one-hour lesson is sufficient to teach the creature to go backwards, the coupling supple, at the touch of the whip behind the saddle and the gentle tension on the reins. The movement should then be repeated from the right side, reins in the right hand, whip in the left.

This movement backward, alternated with the other movements, forward, pirouette, and reversed pirouette, will very soon bring about a state of complete obedience on the part of the horse. The man, on his side, begins to see the effects of the various means which he is employing and to understand the operation of the animal mechanism.

During the work on foot, if the horse is uneasy from need of exercise, put him at the cavesson and longe, preferably without bridle.

A last word: Patience and gentleness; do not forget that you teach, you educate.

CHAPTER XIV

THE HANDLING OF THE REINS

BEFORE proceeding to the further training of the horse with the rider mounted, it is necessary to consider more fully than under the instinctive equitation, the position of the rider's hands and the manipulation of the reins.

No fixed position of the hands is correct for all occasions. What it should be in each special case depends on the degree of education of the horse, on its action, sensitiveness, temper, conduct. It varies with the surroundings, the gait at which the animal is traveling, the character of the road, the state of submission or disobedience. It is modified also by the ability of the rider. It alters from moment to moment with the change of circumstances. All that one can do, therefore, is to give the general principles involved, and the standard position from which variants are taken as conditions change.

Let us, then, suppose a horse, well conformed, properly trained, and quiet, ridden at the promenade trot, by a good ordinary rider with a good seat, in street, road, bridle path, or manege, but without all the paraphernalia and impedimenta generally met with in such conditions. In such a case, the hand will be carried six inches above the pommel, the little finger down and slightly nearer the body

than the thumb. The thumb is up and closed upon the four reins, which fall forward of the hand and to the left, when, as is usual, the reins are in the left hand. The fingers touch the palm at the nails, pressing with just enough force to prevent slipping. The hand is exactly opposite the middle of the body, and exactly in line with the horse's neck. The elbow touches the side without stiffness or pressure.

When, for any reason, the hand is moved from this position, one inch upward, downward, or sidewise, is in general sufficient for the full effect of the change. If for any reason, some other position has to be taken for the sake of conduct or control, what this new position shall be is decided by practice and experience according to the particular circumstance. If, for example, the horse rears, the hand should be dropped as low as possible, the rider leaning forward. If, on the other hand, the horse kicks, then the hand is lifted as high as possible, while the rider leans back and lifts the animal's head.

For the rider on a side-saddle, the position is the same, except that the hand is two or three inches above the right thigh.

During the process of training a horse, the position of the hand varies so greatly that no rules can be given. The master will, therefore, vary his position to meet special problems of mouth or neck or of the two together, and all the various contrac-

tions and defenses of the horse, as his experience suggests.

In ordinary civilian equitation, in the case of men and occasionally even in the case of amazons, there is really no particular reason why the reins should be held with the left hand rather than with the right. But the army man, the hunter, the polo player, and the woman who uses her whip to produce the effects of a right leg, are obliged, naturally, to keep the right hand free for saber, pistol, mallet, or whip, and to use the left hand only for the reins.

For beginners, for all riders mounted on animals not properly bitted, and oftentimes with hunters and park hacks, it is an advantage to hold the reins in both hands. Both in the hunting field and on the promenade, it is sometimes difficult to keep the horse straight at an obstacle or straight on the road. Evidently, in these cases, the rider has better control, and easier, if he does not have the complication of four reins in one hand.

When both hands hold the reins, each taking those on its own side, the snaffle rein passes under the little finger, and that from the bit lies between the little finger and the third finger. Both then pass upward and forward, above the forefinger, held against it by the thumb. When both reins of the bit are held in the same hand, together with one snaffle rein, the other snaffle rein being held alone in the other hand, the two hands should be kept at

exactly the same height, and never more than three inches apart. To make an effect to either side, the hand is carried three inches horizontally, without any tilting of the hand upward or downward.

The reins of the bridle, whether held in one hand or both, are pressed by the fingers only just hard enough to prevent slipping. If the pressure is too strong, the tension will be communicated to the arms, and from them to the whole upper portion of the body. At first sight, nothing seems easier. But in practice, the reins will slip, and unequally. The result is that, when the rider has occasion to draw on the reins, the one which at the moment happens to be shortest, has the most effect.

It becomes necessary, therefore, from time to time, to readjust the reins in the hand.

Suppose that all four reins are held in the left hand. To adjust, let us say, the curb reins, which are those without the buckle, the rider, with his right hand behind the left, takes the free ends with his thumb and first finger, and carries the right hand upward, while at the same instant he relaxes the grip of the left hand on these two. Meanwhile the left hand is kept precisely in line with the horse's neck. As soon as the rider feels with the right hand the equal contact against the mouth, he closes once more the fingers of the left hand and lets go with the right. For the snaffle reins, those with the buckle, the process is exactly the same.

With the reins held in both hands, to adjust

the left reins the rider brings the right hand up to the left, takes with the thumb and first finger as before the reins which have slipped too long, relaxes the grip of the left hand, and draws the reins upward to the proper length. If the reins are too short, they are taken in the same way, but in front of the left hand, and drawn forward. For the right rein, the process is exactly reversed.

It is difficult, usually, to teach a beginner properly to close his fingers on the reins; particularly women, who handle the leather as if it were fine lace, and never really grip it firmly nor have the correct length. Yet grip and length are even more important for women than for men, since the latter have the better control by way of legs and saddle. With both men and women, the fault commonly begins during the early lessons in the ring. If not corrected then, it persists as a bad and dangerous habit, so that one often sees even good riders who have always to be adjusting their reins.

Sometimes, for control or for safety, it becomes necessary to shorten promptly some or all of the reins. Beginners carelessly let them slip through the fingers. Many older riders abandon control of their horses or think it proof of a good hand to have the reins too long. The result is that in sudden emergency — as, for example, when the animal by a sudden jump disturbs the seat — the rider can do nothing until he has taken time to shorten his reins. Then it may be too late. While, therefore, even

the beginner ought to learn to keep his reins always at the correct length, he should be practiced also in shortening them instantly.

The method is much the same as for adjustment. If the rider is holding all four reins in the left hand, he simply seizes them all with all the fingers of the right hand, or certain ones with thumb and forefinger, and draws them upward to the needed length.

I often tell my pupils that the beginner has always two enemies of his safety — his eyes and his fingers. The eyes never look far enough ahead to see where the horse is going; therefore they tilt the head forward and displace the body. The fingers let slip the reins; therefore are these not ready when needed to control the horse.

I have already noted that the determining factor in handling the reins is the need of holding the horse straight, the backbone acting, so to say, as a sort of keel; and that, on the whole, it is easier to accomplish this end when both hands are employed. Nevertheless, there are conditions which make it at least convenient for the time being to change from two hands to one or from one to two. If, for example, the rider regularly uses the left hand for all four reins, in order to have the right hand free for whip or mallet, he may often need to use both hands to control a case of excitement or refusal.

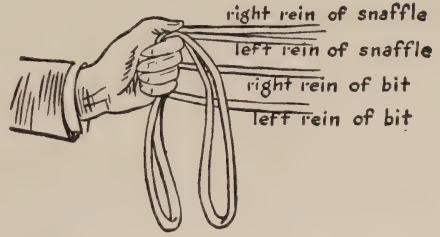
To separate the reins, changing from the left hand to both hands, the little finger of the right

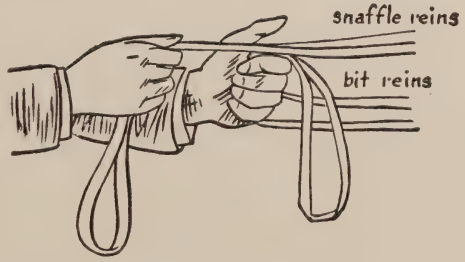
goes over the right snaffle rein, with one finger, or better two fingers, between this and the right rein of the bit. The bit rein is slightly the looser of the two.

It is impossible to give the precise detail of this movement. It has to vary somewhat with the way the reins are carried in the left hand. For much the same reason, it is not possible to dictate the relative length of the two reins, since this is affected by skill of the rider, the speed of the horse, and its education, temper, and surroundings. With certain horses, in certain conditions, at various speeds and gaits, certain ways of holding the reins are better than others. I have experimented widely, and I am convinced that virtually all the methods of the various masters are good in an "intelligent" hand. It is not any fixed position of the reins which gives control over the forehead of the mount, but the effects of hand and fingers on the bits. An able esquire will produce the same total effect with the snaffle or with the bit, with left hand or right hand or both. It is all a matter of equestrian tact.

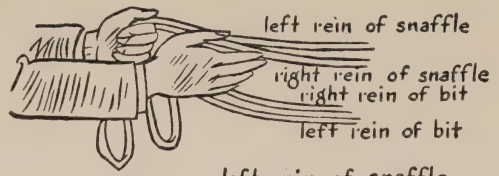
One cannot, then, dictate the precise method of separating the reins until he knows how they are held all together. But whatever the method, the pupil should be frequently practiced in changing from one hand to both and back again. These manipulations are to be executed, first standing, and later at all three gaits, without changing the regularity of gaits and speed. Then is the beginner prepared for emergencies.

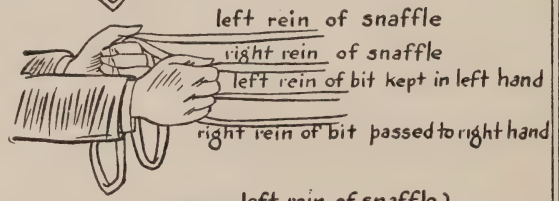
Reins crossed in left hand

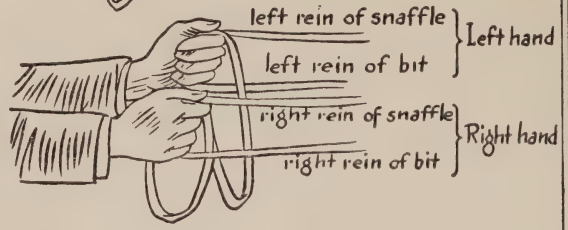




To Separate the reins







There are three principal methods of crossing the four reins in one hand.

According to the first of these, the rider, as soon as mounted, takes the extremities of the snaffle reins in his right hand and places them upon the middle of the horse's neck. He next takes in his right hand the two reins of the bit, also by their ends, and, lifting his hand, gives these a moderate tension. He now places his left hand over these two reins, his little finger between them, and grips them with all four fingers. The free ends pass out between the forefinger and the thumb, which closes on them, and fall to the left side of the hand. Finally, the rider picks up the snaffle reins with his right hand and raises them in front of the left. His left hand thereupon looses its grip with the three upper fingers, but, still holding with the fourth, passes the middle finger between the two snaffle reins, and shuts the thumb against the free ends of both pairs.

For the second method, the rider, as before, lays the snaffle reins on the horse's neck, lifts the bit reins with his right hand, and grasps them with his left. In this case, however, both the third and the fourth finger separate the two bit reins. He next takes the two snaffle reins in his right hand, and passes them between the first finger and the thumb of his left hand, bringing them out below the little finger. The thumb, as before, shuts upon all four reins.

According to the third method, the left rein of either the bit or the snaffle is placed below the little finger, and the left rein of either the snaffle or the bit passes between the fourth finger and the third. The right rein of the snaffle or of the bit is between the third finger and the second, and the right rein of bit or snaffle is between the second finger and the first. Thus a finger separates each two adjacent reins.

One last manipulation of the reins remains to be considered — the ancient practice of jerking the bit.

The old school of equitation recognized this action as a means of controlling a disobedient, restive, or vicious animal. At that epoch only stallions were ridden; and the character of the riders had to match their mounts. Pluvinel, de la Broue, and Grisons recommend that, in case a horse refuses to turn to the right or left, to change from gallop to trot, or from trot to walk, or to stop, the rider should "give him several sharp jerks against the mouth; and in the mean time call him with a strong voice, 'Pig!' 'Cow!' 'Scoundrel!' 'Coward!' 'Felon!'" a complete vocabulary of epithets not understood by three quarters of humankind.

Of course these excellent masters did really produce the effects they desired; but it was by the sound of the voice, not by the epithets. Moreover, the jerk on the bit cannot have any other result than to destroy the animal's understanding of the effects of the bit by making him fear the pain.

Jerking the bit is, then, a proof of lack of both kindness and competence on the rider's part. For after several repetitions, the horse, remembering the pain, expects still another jerk whenever the rider does anything with the reins; and in order to protect itself, it raises the head very high. In this position, the jerk cannot be operated. If the rider tries it, the horse will get away at high speed and become unmanageable.

The horse's mouth is extremely sensitive, and needs, more than any other part, the study of the rider and the practice of the principle of *strength of effects* rather than *effects of strength*. Strength of effects means intelligence. Effects of strength mean jerk and saccade. Brutality belongs to the nature of an animal; but intelligence is the great gift of man. It is not by making the horse afraid of the bit that we make it understand the meaning of its effects. Only by the agreeable contact of the bit upon the bars, and by the sensitive repetition of this contact, does the horse come to understand, without fear, the fingering, the equestrian tact of its rider.

The first action of any animal, man included, on feeling pain in the mouth, is to shut it. But when a horse shuts its mouth forcibly on the bit, no mere two hundred pounds of human rider can pull it open by any effect of strength alone. But strength of effects, the taking and giving of the rider's hand, will release the tension and open the mouth, not

because of any pain, but by a pleasant relaxing of the jaw. If along with this, the rider, by the effects of his legs, concentrates the animal's forces so as to bring the center of gravity under his seat, he establishes a control from which the animal cannot escape. But it is not by jerks and saccades that the horse comes to understand the effects of bits and legs.

Nevertheless, if the horse, taking contact with the bits, hesitates to yield the lower jaw, some vibration of the snaffle rein may be needed to relax the mouth. But vibrations and jerks are two different matters. The one is beneficial; the other is useless and dangerous.

CHAPTER XV

THE FIRST WORK MOUNTED: THE HANDS AND THE AIDS

ALL the work done up to this point has been merely preparatory. Now the time has come for the horse to be mounted, and for the whip to be replaced by the aids and effects of the rider's legs.

Other methodists, after completing the flexions and the mobilization on foot, pass directly to the flexions mounted. This I consider a serious error. To mount a young animal, and to keep it standing still during the time of its lesson on the various flexions, is to offer far too many occasions for nervous impatience and disorderly acts. Yet how is the rider to prevent these? The horse does not understand the aids. The effects of hands, legs, and seat are ignored. The rider is at the mercy of the animal's ignorance and caprice.

To meet this difficulty, I have for many years relied upon the following system:

As soon as the preparatory work on foot is completed, I mount the horse, and begin at once the training in the aids, before proceeding to the flexions standing still. First of all, I employ the legs, so that I may be able to push the horse forward against the contact of the bits. Not only do I continue my teaching of the aids of legs without

spurs, at the beginning; I employ also spurs without rowels, for the sake of accustoming the horse to their use, to increase the effect of the legs, to accelerate the speed, and to obtain the contact of its jaw upon my hand. I am not satisfied with the walk only. I ask also the trot, since this is oftentimes a very great help in exercising and quieting the animal.

Only after the aids of the legs are well understood, so that I can always determine a free forward movement, do I proceed to the reversed pirouette, pirouette, and backing, for the mobilization of the fore hand, the hind hand, and the body as a whole. On the other hand, I begin the instruction of the front hand by the flexions mounted, while my control by my legs is still only partial, standing still, at walk, and at trot. Thus, without difficulty, restiveness, or rebellion, I arrive at the "in hand"; and finally, after more and more polishing, at the "assemblage."

Meanwhile, with the instruction of the horse, has progressed the tact of the cavalier in using his aids.

The various sorts of equitation employ many different means for directing and training the horse. The *équitation raisonnée* and the *équitation savante* admit only three aids — the hands, the legs, and the seat. Cavessons, whips, and martingales, chirruping with the tongue, caressings and punishments, are only means for helping the animal to comprehend the effects of these three.

Baucher in his method, though he includes the seat as an aid, gives no theory as to the relation of the seat to the assemblage; and his own position, always correct, is always and invariably perpendicularly above the center of gravity. Photographs of Fillis in action show alteration in his position which act upon the center of gravity in direct proportion to the movement involved. But only in a few of the movements explained in his method does he maintain the need of a proper inclination of the upper part of the man's body in the direction of the horse's motion.

The seat, simply as a means of staying on the horse's back at all gaits and movements, cannot be considered an aid, so long as the horse keeps to his merely instinctive equilibrium. But as soon as this instinctive equilibrium is replaced by the condition of transmitted equilibrium, then the effect of position of the rider's body, acting upon the center of gravity of the horse, becomes very powerful.

I discuss this better later on, after I have considered the theory of the assemblage, *rassembler*, and the state of collection. For the present, it is important for the student's understanding of the general idea of "accuracy of seat."

A second and more important aid is the hand. For this it makes no difference whether the horse is in instinctive or transmitted equilibrium. In either case, the effect of the reins passes to the mouth, from the mouth to the neck, from the neck to the

front limbs, and from the fore hand throughout the entire animal mechanism. Baucher fully understood the importance of this aid, and created the flexions of mouth and neck. So too did Fillis, who was first to apply the expression *doigter*, that is to say, fingering.

The bridle hand can produce three general effects, which, in their turn, by the fingering and by the different positions of the hand, are still further modified in great variety.

The first is by tension of the reins, a retarding. Its opposite is freedom, permission, concession.

The second effect is by the steadiness of the bridle hand. Its immediate effect is sustension, and later elevation.

The third effect is by the position of the hand, to indicate the direction which the animal is to take.

These effects, in general, should be produced one after the other, but not simultaneously. To produce any one without at the same time producing any trace of any other, or disturbing the conditions involved in the other two, constitutes the "intelligent hand."

The usual position of the hand is that given above. But for control, training, or the like, the reins are carried upward, downward, backward, left or right, to an extent proportionate to the effect desired. During such movements the hand should always continue to feel the bit. When the hand has reached the position where it will obtain the

required movement, it remains fixed in place until the movement is completed. Thus the motion of the hand conveys the nature of the movement; the fixation of the hand controls its execution.

CHAPTER XVI

THE LEGS AND THEIR EFFECTS

By "legs" one means always the leg below the knee. The thighs remain always in permanent contact with the saddle, and always entirely independent of any movement or pressure of the calves. The common expressions of riding-teachers, "Close your legs," "Use your legs," "*Fermez les jambes*," refer, then, only to the free portion of the limb. They do not mean, as many beginners mistakenly suppose, that the horse's body is to be enveloped by the whole leg from hip to ankle!

The legs, including the feet, are the second mobile part of the rider's body and the most important means of controlling the horse. They and their effects are the essential promoters of every action of the horse, physical and moral. They must, therefore, act to just the right amount, neither too much nor too little; at just the right instant, neither before nor after, in accord with the fingering of the reins and the cadence of the stride; not interfering with the step, but reëstablishing the *tempo* if lost; coördinated with the sensibility, nervousness, energy, or the lack of these, of the animal. The action of the legs demands, therefore, the highest "tact" on the part of the rider. Many

are called, but few chosen to the proper management of this delicate and powerful aid.

To explain the effects of the legs and the causes of these, and to deduce from such general principles the correct manner of using these effects in practice, is the most complicated subject in all equestrian science.

In ancient times, before the invention of the bridle, the legs provided the only means of controlling the horse. Later came spurs. All the masters of equestrian art, from Xenophon to James Fillis inclusive, have laid down the principle that the effect of the contact of the legs is to impel the body forward in whatever direction is indicated by the reins.

This is, nevertheless, only partly true. When the legs are pressed against the flanks of an uneducated animal, their first effect is merely to tickle the *panniculus carnosus* muscle, which envelops the body from chest to haunch. But although this muscle does adhere to certain of the locomotor muscles, its action is entirely independent of the whole locomotor system. When, therefore, the horse feels the touch of a foreign object, it merely uses the *panniculus carnosus* to shake the skin, whether that foreign body be legs, spurs, or flies. It is, consequently, only as the result of education that the horse learns to support unmoved the rider's legs and spurs.

But below the *panniculus carnosus*, from thorax

to pelvis, lie the great muscles which move the fore and hind limbs, and which are the principal agents in locomotion. Of these the *latissimus dorsi* carries the arm upward and backward, the *longissimus dorsi*, when it acts alone, is a powerful extensor of the vertebral column, and the deep pectoralis, attached at the angle of the shoulder, draws the whole fore limb backward. The student desiring to understand more fully the attachments, relations, and actions which are effected by pressure of the rider's legs, should consult some standard work on the anatomy of the horse.

It is, then, easy to understand that the rider's legs affect first of all the horse's hair, skin, *panniculus carnosus*, and abdominal tunic, all of which have nothing to do with locomotion; while the great pectoralis and its adjuncts, the *latissimus dorsi*, and the muscles of the haunches and hind limbs, are either affected only secondarily or remain unimpressed. But the first contact of the rider's legs is for the horse rather unpleasant than otherwise. It takes, therefore, patient teaching to accustom the untrained animal to endure this contact without anxiety, nervousness, or fear. Only after the horse, standing quiet and calm, supports the pressure of the legs on all parts of the body, from as far forward as the rider can reach to as far backward, has the time come for teaching the significance of this contact for the more important muscles of locomotion, such as the great pectoralis.

All masters of equitation have heretofore advocated putting the legs in contact with the horse's flanks and holding them there until the pupil makes one or two or more steps forward. I differ completely with this idea. The horse, standing, has all four limbs directly below its body. But in order for it to move forward, one of the fore legs, executing the three movements of the stride, must reach forward and come to the ground, ready to receive the weight. It thereupon becomes the fixed point upon which the great pectoralis acts to pull the body forward. But an acting muscle pulls one of its ends toward the other; not both ends toward the middle. If, then, the rider's two legs press equally upon the middle of the great pectoralis muscles, their natural action is prevented. All that the horse can then do is to stop; or if it be energetic or violent, to rear; or possibly to back, if the fixed point on which the muscles pull is the pelvis, the haunches, the ilium, or the loins. It is some improvement on the usual procedure gently to open and close the legs, making little repetitions of the contact. But even this is not completely satisfactory.

I advocate, therefore, this device. First, I make contact with both legs. Then, still keeping contact with one leg, with the other, very gently, I make and break contact, my leg never going more than half an inch out from the animal's body. Very soon, I see the fore leg on the same side take its forward stride, and at the same time I feel under me the

opposite hind leg come off the ground. This is the first step! When one has obtained the first step, if he is a trainer, a master, he may feel sure that millions of steps will follow by and by. Now is the time to prove to your pupil, by caressings and rewards, that what he has done is what you asked. You have obtained the correct response, scientifically and naturally, without the quarrel, doubt, or confusion, which are the result of the wrong method of the old masters of equitation.

I dwell especially, at this point, on the importance of patience and moderation. Do not forget that you are an instructor, and that your pupil does not yet understand the meaning of your effects. Accept, therefore, your duty. Act as if you were dealing with a child who does not yet know the meaning of papa and mamma. Teach by kindness. Do not be violent. Do not kick the animal because it does not yet comprehend you. If you do, you will be sorry afterwards. Remember always that a horse, once properly educated, answers to the delicate and intelligent effects of your legs as it answers to the deftest fingering of your reins; and that all your domination of the animal is the product of your intelligence, a strength of effect, never, never, an effect of strength.

When, from standing, the horse will pass to the walk at the effects of the legs, without showing anxiety or haste, it should be taught by the same methods to pass from walk to trot, and from trot to gallop.

It is, however, one of the axioms of equitation that any effect of rider on horse loses its influence more and more the longer it is continued. If, then, bits or calves or spurs are employed continuously, without relaxation, the horse in time accepts the contact, becomes wonted to it, and all the effect disappears.

It is, therefore, necessary, from time to time, to "render the legs" in the same way that one renders the hand. Otherwise the sensibility to the pressure of the legs will wear away, or the hind hand will become fatigued and the horse refuse. But since the effect of the legs is less natural to the horse and less obvious to the rider than the effect of the hands, even more care must be taken to employ this effect with proper moderation. Moreover, if after obtaining motion forward by means of the contact of the legs, the rider continues to maintain the same contact as before, the horse will soon fail to understand the meaning of the first pressure. Relaxation of the contact is absolutely essential for conveying the meaning of the contact.

There are, however, two different ways of rendering the legs. Suppose that, to urge the horse forward, the rider needs three degrees of pressure. He exerts these three degrees, and the horse goes forward. The required speed being obtained, the legs then return to their normal one degree of contact, and the horse continues the movement for himself. This principle applies to all gaits and speeds.

There is, in addition, a second way of rendering the legs, which though unrecognized by the reasoned equitation, is far too much practiced — namely, the loss of all contact with the horse's flanks. To do this, one ought to be very sure of his seat, his horse, and his surroundings. Even then it is wiser to confine this meaning of the verb "to render" to occasions when the horse is standing still. Evidently, rendering the legs with the horse in motion, should not involve, at the same time, rendering the hands. One who does this is said to "abandon" his mount, a serious fault.

Thus far, for the sake of simplicity, I have spoken as if the effect of the rider's legs on the horse's body were the same, whatever the precise region of the contact. This is not, however, entirely the fact. There really are three different effects corresponding to three different positions.

Contact well forward near the girths tends to collect the horse and to aid the hand in establishing the state of equilibrium. This position tends also to keep the animal in equilibrium during movement.

Contact far back against the flank, on the other hand, tends to draw the hind legs forward under the center of gravity, and thus to favor stopping, or even going backwards.

The intermediate position between these two is the one which sends the horse forward, as already discussed.

These three different ways of using the legs,

understood by both horse and man, will avoid certain mistakes on the part of both.

One more principle is to be noted. The action of one rein alone or of one leg alone has no meaning. The only effect that the horse can learn to understand is the additional or repeated effect of one rein or one leg while the other remains unmodified and uniform.

CHAPTER XVII

THE SPURS AND THEIR EFFECTS

SPURS had, at first, no rowels; but were stiletto-like and long. At that epoch, the bit, called *buade*, was very severe; and the saddle had high pommels before and behind. The rider's legs, therefore, extended straight down; and since he could not bend his knee, he needed the long spur to counteract the too powerful effect of the bit. Even to-day the Arabs still use this type of spur, called *shabir*.

But with the progress of equitation, effects of force have given way to force of effects, and the stiletto point has been superseded by rowels, severe, medium, or mild in proportion to the sharpness of their points. The choice of the right degree of severity of the rowels needed for any particular animal is governed by the creature's dullness or sensibility, and determined by the rider's equestrian tact. In any case, the horse has to be first accustomed to dull rowels and trained progressively to those more severe.

A great many sorts of rowel have been used, with various theories to explain their different forms. Practically, it is important to have the rowels turn loosely on their pivots. Otherwise, the horse's hairs may collect around them and prevent their turning at all. In that event, the points, being fixed,

are a great deal more severe; and the rider may unwittingly spur much harder than he intends. Motion of the rowel from above downward is likewise more severe than in the reverse direction.

The attack with the spurs, at all periods in the history of equitation, has been considered both as a means of correction and punishment, and as an augmentation of the effect of the legs. It has been shown by writers on the subject that the use of the spurs follows, as a necessary result, the invention of bit and bridle. Evidently, the bit in the mouth, bearing upon the sensitive bars, gives rise to discomfort and even pain, so that the horse naturally hesitates to go forward against the sensation. This was especially the case with the earlier bits, with their long branches and their disks with screws attached to the ports. When the legs alone proved insufficient to push the horse forward against the bit, the whip had to be employed. But this can be used on only one side at a time, and is therefore inefficient. Moreover, the mounted soldier, reins in one hand, lance or sword in the other, could not use the whip. Spurs, therefore, had to be invented to force the horse to go forward, notwithstanding the pain of the bit manipulated by the heavy-handed rider.

The first master to begin to use the spur with moderation and intelligence was Comte de la Guérinière. His principle of the "delicate pressure of the spurs" is still noted by the more progressive

schools of equitation. But equitation, with the progress made since de la Guérinière's time, has passed from the instinctive to the reasoned basis, and now to the scientific. It is no longer a question of practicing what our ancestors have done, but of following a progressive education, a sequence of reason, cause, and the effect of the means used by the man on the horse.

Now the first principle of the scientific equitation is the force of effect; it denies forever the effect of force. This being admitted, it is no longer by the severity of the bit nor by the severity of the spurs that we train the horse. I say train, as we still do, mistakenly: I mean educate. Following a progressive education, the horse is first taught by a trainer on foot, by the use of the whip on its flanks, to move forward against the bit. This practice with the whip prepares the animal for the effects of the legs upon the same part of the body, when the rider is mounted and the legs give the impulse to the entire machinery. This impulse of the legs is received by the bit, making contact with the bars, so that there is a continual fluctuation of the equilibrium as the center of gravity shifts backward and forward at each step.

To make this matter clear, suppose a horse to be mounted and standing, its training by the flexions of mouth and neck being so far advanced that it is well "in hand." In order to maintain the animal in this position, the center of gravity at the center of

mechanism, the rider is exerting, let us say, a force of twenty pounds, ten pounds on the fore hand to maintain the "in hand," and ten pounds with the legs, to maintain the contact with the bit. Otherwise the "in hand" will cease and the state of equilibrium be lost.

Suppose, now, that, in order to send the horse forward at a walk, the rider, keeping always the pull of ten pounds at the reins, increases the pressure of his legs to fifteen pounds and then to twenty; but the horse still keeps its center of gravity where it was, and remains standing still. If at this point the rider gives the hand, the center of gravity will pass forward and the horse will start; but the "in hand," which is part of the equilibrium, will be lost. If, therefore, the legs alone have not the power needed to push the center of gravity forward while the reins continue to act, the rider must have spurs with which to multiply their effect.

The horse having, if I may so express myself, let the center of gravity pass forward, would fall if it did not at once extend a fore leg to receive the weight. This constitutes one step. As the horse moves forward, the spurs abandon their contact; but the legs still maintain their pressure as before the spurs were applied. The center of gravity will return to the middle point; but the horse will continue to move forward, still in the state of equilibrium. All this is in accord with Newton's

first law of motion as set forth in his *Principia*. The body, once set in motion by a force, continues after the force is withdrawn to move forward in the same direction until another force interferes. The horse, therefore, without further spurring, continues to advance at the same speed, until something else occurs.

This, then, is what we mean by the "attack" of the spurs; nothing brutal, sudden, sharp, or unexpected, merely the supplementing of the effect of the legs, which alone were not sufficient. But the animal has life, and consequently, senses and will. It does, for a time, continue to go forward in a state of equilibrium, under the impulse of the original force. Sooner or later, however, some new sensation becomes a disturbing force. It loses its uniform motion in a straight line, and with it the state of equilibrium. Thereupon, hand and legs, spurs, if necessary, must again come into action.

In such a case, the spurs are a corrective, not by their own direct effect, but because they help to restore the state of equilibrium, and thus to inhibit the animal's own will, which is the disturbing force. But though the good-will of the horse is a pleasant state, it really is very little matter what the horse thinks. The only point is submission to the will of the rider, who, by complete and continual control of the physical horse, sets quite on one side the will of the moral horse. Then and only then is the horse an utter captive, unable to disobey, unable to move

a limb except at the intelligent command of its master.

On the other hand, we must not forget the great principle, already accepted, that every impression made upon the animal loses its effect progressively as the impression is continued. If legs or spurs are held steadily against the horse's sides, it shortly becomes quite insensible to them. It must, then, have its sensitiveness reawakened by repeated attacks.

For this purpose, while the horse is walking, trotting, or galloping, the rider, taking a firm seat, closes his legs progressively until he presses with his full strength, the hand meanwhile being firm and steady, and the rider cool-tempered and calm, confident in himself and his seat. These conditions realized, the rider turns his toes outward, the spurs touch the flanks near the girths, pinch, and then release, while the legs press with the same force as before the spurs were applied.

The spurs do not remain in contact with the flanks. The touch is brief, but the pressure is repeated again and again, in about the *tempo* of a quarter-note in music, until the horse, calm and obedient, in a state of equilibrium, stands still or moves forward at the same speed and gait as at the beginning of the attack. If, however, the horse, at the attack, backs or refuses to go forward, then the *tempo* of the application of the spurs is increased, until such time as the horse advances, always upon the hand, with the bit in contact with the bars.

If the horse drops its head when spurred, the rider takes the snaffle in one hand and lifts the head with the snaffle, never with the bit. The attack is completely successful when the horse's head and neck go steadily upward and forward upon the hand of the rider, the face nearly perpendicular to the ground and the lower jaw open.

Thereupon follows a sensation well known to masters of the art. As the attacks bring the hind legs below the haunches, the coupling is lightly opened, while the hand, acting upon the bit, throws back upon the rear legs a portion of the load previously supported by the front pair. The rider feels the weight pass below his seat. He hears the saddle give a sudden crack as the muscles of the trunk contract. Still, it is not absolutely necessary that these two sensations should accompany the collection of the horse into equilibrium. I have found some horses in which they do not always occur.

To a young trainer, these attacks of the spurs appear terrible and dangerous. To the consummate esquire, they are the simplest matter. The scientific equitation does not regard an animal as trained if it does not respond to the attack by collecting itself, or if the attack throws it out of the state of equilibrium.

The attack of the spurs should always be deft — *le toucher délicat de l'éperon*, is the phrase of the Grand Master, Comte de la Guérinière. These are

the most exacting of all our means. They act upon the physical forces of the animal, and upon his moral forces. They affect especially his will. They are, therefore, a most important means of control if employed for their strength of effects. But they are most dangerous when used as effects of strength.

Masters of the equestrian art have all assumed that the spurs have two uses — one for conduct and one for punishment. I admit their use for conduct, but I deny their use as a corrective in the sense in which other writers have taught. I admit their use as a corrective in so far as they augment the effect of the legs. I grant that, when the legs alone are not sufficiently powerful, as a means of conduct, to impose upon the horse, by my will, the position of equilibrium, so as to paralyze movements of revolt originating in the animal's will, I employ the spurs. But the effect of these is always to reënforce the effects of the legs, which are of themselves impotent to obtain the position of assemblage. By means of the spurs I am able to correct a wrong position which the horse takes in revolt, and which would otherwise put in jeopardy my control over him, and bring my intelligent will into subordination to the enormous physical strength of an unintelligent brute.

I do not believe that the animal is influenced by sharp physical pain in any such degree as a man is, who by his education is always more delicate physically, and morally more fearful than the ani-

mal, who has no dread whatever of death. It is, therefore, not by inflicting physical pain that the man dominates the brute; but rather by the skillful use of the sensations which the man is able to impose. Whenever pain becomes the custom, the animal no longer heeds it. But agreeable sensations are retained in memory, and so dispose the animal to obey for the sake of the caresses and rewards.

I have already explained that the purpose of the flexions is to obtain equal contact of the bars upon the bit by the effect of the two legs used equally. Evidently, if the legs do not act equally, the contact of the bit will also be unsymmetrical. So much the more, then, must the vastly more powerful spurs be used with precise equality if the animal is to be kept straight and equal in all his steps and gaits.

It is for this reason most important that the teeth of the two rowels be equally sharp or dull, and that the spurs be set immovably at the same height; otherwise the attack will occur sooner, or at a different place, or be more severe, on one side than the other. I hold my own spurs in place by having a small piece of leather at the top of the heel, on which the spur rests, and a very short strap which passes in front of the heel below the boot. But the best method is to follow the advice of Fillis and to have box spurs set permanently in the boots. These cannot be displaced and will always act equally.

A rider is said to "apply the spurs" when he brings them against the horse's flanks and holds them there. Oftentimes during the horse's education, the rider needs to bring back the animal's attention, which has been distracted by some sight or sound, or has simply lapsed. This moral state of the animal should never be tolerated, lest the horse come to think that he can get away from the rider's control at his own will or because of what he sees and hears. It is essential that the man shall be master of the animal, always and in every circumstance. To apply the two spurs at the slightest distraction is highly efficient, provided their use is moderate and progressive. The legs should be closed first, and the spurs applied without shock, as the legs alone prove insufficient.

A great many poets and other writers speak of riders who "bury their spurs in their horse's flanks," and thereby start them off like lightning. But the fact is that to bury the two spurs brusquely is precisely the best way to stop a horse running at full speed. The prick of the spurs makes him kick out with the hind legs, which, getting no support from the air, can no longer drive the body forward. The horse ought to bear the touch of the spurs as calmly as he bears the pressure of the legs. It is the repetition of the contact that produces the effect, not the single brusque application.

Burying the spurs has nevertheless its place. Certain horses are thoroughly vicious by nature,

or through restiveness or laziness are always trying to escape from the rider's control. With such animals, the man must, from the beginning, assert his superiority with intelligent force. It is not, in such cases, a question of training or education. It is a question of taming, yet without creating fear by excessive punishment. The rider must be positive, strict, and severe; but always reasonable and calm.

The result of burying the spurs in the horse's flanks and holding them there is commonly to inhibit the action of the great pectoralis muscles, and thus to prevent the forward propulsion of the body, while at the same time punishing the creature for an act of restiveness. The horse, therefore, finding himself unable to use his members in rebellion, cannot but feel the rider's mastership. But if the horse does not already understand the effect of legs and spurs, surprise may throw him into disorder. Moreover, the sharpness of the spurs, the strength and temperament and training of the horse, and its native stubbornness, all need to be considered by the rider before he buries his spurs in its flanks.

A rider is said to "tickle with the spurs" when he uses these instruments inopportunely and without reason. Certain riders like to exhibit an ill-founded pretense of knowing how to ride, and render their mounts impatient or frantic by continued tickling. Others, who have no accuracy of seat, let their legs

flop back and forth with the movement of the horse. Happily for the latter sort, the horse that supports such treatment is too old or lymphatic to mind anything. Otherwise, with an energetic animal, there would shortly follow a divorce by mutual consent. Still a third sort of rider is the one who has so little confidence in his seat or himself that, when occasion comes, he is afraid to use his spurs with justice and energy. He tickles because he has not the faith to use the persuaders firmly.

In short, the man who tickles with his spurs is like the man who teases his friends. The one makes himself an annoyance, and commonly finds his retribution in lack of comrades and true friends. The other is likely to make, of a good horse, either a nervous and excited animal, or else a poor, lazy, confused victim and slave. Spurs on the wrong heels are like matches, knives, and firearms in the hands of children.

On the other hand, certain horses are "ticklish to the spurs." That is to say, they will not accept the contact without showing dislike or fear. Some horses make continual movements of the tail, or turn the head to look at the rider's leg. Some stop; or, if standing, half rear and half back. Some put back their ears, and roar or growl. Some grind their teeth. Some urinate nervously, in small and repeated jets.

Mares are especially liable to this fault. The cause is usually a too great sensibility of the hairs

of the flanks and of the *panniculus carnosus*. The cure is to ride for a time without spurs and with the legs against the flanks. This is followed by spurs with the teeth filed dull and encased in leather, until the horse becomes progressively accustomed to the ordinary sort. The same treatment can be used for horses that have been made ticklish by improper spurring. A few cases, apparently cured, afterwards relapse. Some animals are quite incurable.

In sum, then, the spurs, properly used, are our most powerful means for obtaining, with the help of the bridle, a position of the animal in which all defense, restiveness, disobedience, or signs of fear become impossible. We do not, indeed, alter the horse's moral state; but we force it to assume a position in which it cannot use its members for the acts which correspond.

On the other hand, the spurs are a dangerous tool when used by a rider who employs them without moderation, delicacy, propriety, and discretion, like a monkey playing with a razor. Nothing is more ridiculous than to see either a man or a woman rider, wearing spurs as an ornament of fashion, with the legs so extended as to bring the heels close to the horse's shoulders. It is easy, in such a case, to understand the sarcasm of a certain master: "It would be better for such a rider to buckle his spurs to his own elbows, and use them against his own flanks."

Since, then, the spurs are the most powerful means recognized by equitation, their employment demands moderation, intelligence, experience, justness, exactness, propriety, accuracy, equality, precision, and faith, as moral qualifications, and, as physical basis, that *sine qua non*, the accurate seat, without which the other qualities are of no avail. In fact, the rider needs as much equestrian tact in his heels as in the hands and fingers which manipulate the reins. The difference is that a mistake made with the hands is usually, in large measure, reparable; but an error committed with the heels will occasion disorder or revolt that is not only dangerous at the moment but may make upon the animal a moral impression that is unforgotten and may be forever irreparable.

I have already explained that the effects of the rider's legs on the horse's flanks are indirect. The muscles of propulsion are overlaid by the *panniculus carnosus*. On this, the pressure of the legs acts directly; but only by education is the effect of this pressure passed on to the *pectoralis magnus*. But the function of the *panniculus carnosus* is to contract at the touch of any foreign or strange object, such as an insect or a twig. The young horse, therefore, when mounted for the first time, reacts to the contact of the rider's legs as to any other annoyance. If he is uncommonly excitable, he simply raises a hind leg and makes ready to kick. Only by the process of education does the horse

learn to support the contact of the rider's legs calmly and without impatience.

The first effect of the contact is, therefore, to make the horse raise one or both hind legs. But, by our training, we obtain instead the forward movement, the front leg gaining ground on the side of the pressure. After the first step, comes the second, and then the trot and gallop, all associated with a more or less complex system of signs, based on pressures of the rider's legs. This is sufficient for ordinary riding. But when the horse revolts, no matter what the occasion for his disobedience or disorder, we employ the spurs to reënforce the effects of the legs.

What, then, can the spurs do? Without coöperation of the hand, nothing. But the two, hand and spurs, acting together, constrain the animal to a position of equilibium, in which all his bodily forces are assembled under a center of gravity, in such wise that the horse cannot displace this collection of its powers without the rider's permission and intelligent direction. For in order to displace its body, in case of revolt, the horse would have to use its muscles in a way impossible for it by the law of its nature. These powerful effects of the spurs are, therefore, neither brutal, nor abrupt, nor provocative. Their action is entirely mechanical, and therefore rationally calming and pacifying.

In other words, the spurs, as they affect an animal in a state of moral disorder, act like oil

poured upon the waters of a turbulent sea. The cause of the turbulence remains; but the local effect is destroyed. So with the horse: its emotions are the same, but it cannot act them out. Its physical strength is locked, like an insane creature in a strait-jacket.

The progress of the animal's education to the effects of the spurs is, therefore, the same, in general, as its training to the effects of the legs, except that it needs even more patience and kindness. In case the horse has previously been maltreated with the spurs, the training is the same, but still more kind and patient.

For this education, every esquire needs three sets of spurs. The first degree is without rowels, the end of the branches being rounded. The second degree has rowels without teeth. A penny or a ten-cent piece answers nicely. The third degree has the teeth short and dull. If when these rowels are pinched between thumb and finger of the gloved hand, the teeth prick through the glove, they are a little too sharp. The length of the branch depends on the length of the rider's legs and on the width of the horse's flanks, the longer-legged man needing the longer spurs. Only experience determines just what the proper length shall be.

The trainer, equipped with spurs of the first degree, mounts the horse, and stops him well away from the wall, if the work is done in a manege, in order that the horse may not try to rub the rider's

leg against the barrier or injure itself by kicking. He then closes his legs with all his might, pressing the horse's flanks near the girths, while the reins, held in the left hand, make their effect. The toes are now turned outward, and the right spur is brought close to the right flank, within perhaps a tenth of an inch. The rider soothes the horse with his voice, and as soon as the animal is perfectly calm, he applies the spur progressively — very progressively — and holds it against the flank, meanwhile caressing the right side of the animal with the right hand, and encouraging him with the voice. Be generous with this, not economical. Put your heart into your voice, and your horse will understand your meaning. Very well! The spur has remained a moment. Begin again with further progression. The horse has felt the iron of your spur, and look at his ears! Ah! Ah! They are immobile. He thinks. He thinks something new, a new sensation. Take care, take care, young esquire. Voice! Voice! You have it again; I see it in your face. You smile. Now encourage with the voice; put your heart in it. Caress with the right hand the nearest possible to the spot where the spur has made contact.

Change now the reins to the right hand, and begin the same progression with the left spur, with the same generosity and the same care. You have it on the left as well as on the right. Now ride your horse at a walk, or even at a trot, for dis-

traction and exercise for the animal, and rest for your own legs.

Stop again near the center of the ring. Apply the right spur — very progressively. Encourage with your voice. Be careful now, for, if your horse is young and you are a novice, neither of you yet knows quite where you are going. You have contact with the right spur. Hold it and come — come — with the left. Voice! Voice! You have contact on both sides. Caress with the right hand, neck, sides, croup. Keep the same pressure with the legs, but take away the spurs. Now voice, caresses. Bring both spurs at once into contact. It is the critical moment. But you have it! Then release the contact progressively, cease the pressure of the legs, dismount, open the curb chain, and send your pupil to the stable. In the afternoon, repeat the same lesson three or four times.

When the horse supports the contact standing still, pass to the next demand. From standing, the two rowels in contact, try, by leaning the body forward in the saddle, to make the horse move forward. After a few steps, lean backward and bring him to a stop. Again forward. And again stop. Rest your legs and caress generously. Repeat again and again. Let everything be always calm and quiet, without disorder, and without anxiety on the part of the horse.

Next, take the pupil at a walk near the wall. As he walks quietly, begin the pressure of the legs, and

add progressively the contact of the spurs. Hold for a few steps, and then release, but continue the pressure of the legs. Again make contact with the spurs; hold it as before for a few steps; then cease the touch of the spurs, but continue the grip of the legs. Once more touch and release. Finally, make contact with the spurs, lean back, finger the reins, stop the horse, caress again and again, remove the spurs, ease the grip of the legs, dismount, and send the pupil to the stable.

There should be six such lessons at the walk, the legs pressing constantly, but the spurs making and breaking contact every few steps. After six lessons at the walk, give six lessons at the slow trot.

Now that the horse supports the spurs at both walk and trot, it is time to begin the attacks. If the preliminary work has been well mastered, the next step will be easy.

The horse is standing. The rider, by means of his legs, makes the contact with the bit, the horse upon the hand and light. The rider shuts his hand and holds his fingers closed. As soon as the legs are fixed, their pressure begins. The spurs then make contact; and at the same time, the fingers open. Then come: fixity of hand — fixity of legs — the horse at the walk — caresses — fixity of hand — fingering — fixity of legs — caresses. The horse is walking: make contact with the spurs — shut your fingers — lean back — the horse stops. Forward again: open your fingers — spur — lean forward —

stop. After this work is thoroughly understood, the same series is run through, from walk to trot, from trot to walk, from walk to stop, from stop to walk, from walk to trot, and so on.

Progress thus far has accustomed the horse to the touch of the spurs, and convinced him that nothing will hurt and that there is nothing to fear. We now complete the attacks. The horse is standing. The rider opposes with his hand and finds contact with the mouth. The legs are closed, the spurs near the girths. Then follows a delicate and repeated contact and release of the spurs, at the *tempo* of an eighth-note. This continues until, by the flexion of the lower jaw and the alto-axoid joint, the bit loses contact with the bars, though the rider's hand does not move. As soon as this flexion of the mouth and head is obtained, the attack of the spurs ceases. The bits again make contact; the attack repeats as before.

In other words, your hand makes five degrees of effect, and your attack with the spurs makes also five degrees. Your two means are, therefore, equal. The center of gravity comes exactly in the middle of your seat and perpendicularly below your spinal column. There is established an equilibrium of all forces. Your horse is in the state of assemblage. But if the center of gravity is under your spine, while the horse is standing still, it is because your body, from head to coccyx, is perpendicular. If, now, that perpendicular is carried forward, the

center of gravity also shifts forward. The equilibrium becomes unstable. The tendency is to fall forward. The front legs advance to prevent the fall, attract to their aid the hind limbs, and the walk or trot begins. Then, if walking or trotting, the equilibrium becomes disturbed, fixity of the hand and a light attack of the spurs will reëstablish it, while fingering on the reins will maintain it.

When the horse has so far advanced in its education as to understand well the attack of spurs of the first degree, the work is exactly repeated with spurs of the second degree. Following these, spurs of the the third degree will still further augment the effects of the legs, without affecting the pupil's equanimity.

Finally, to student and novice, I give this advice. As you carry on your progressive work with the attacks, certain imbeciles — stable boys, riding-masters, the ignorant public — will want to know what you are about, and whether you are afraid of your horse. Do not care. Let them criticize: it is very easy. But if you find one of these expert hunters or polo-players who think they have a seat, get them to try the work that you have been doing, keeping their seats while applying and holding their spurs exactly, precisely, justly, equally, and accurately. Then, if they make the attempt, observe them for your amusement!

CHAPTER XVIII

MOBILIZATIONS MOUNTED

THE "in hand" obtained by the series of flexions with the horse standing still has not yet trained the animal to move its limbs while still keeping the head and mouth in the "in hand" position. If, therefore, the rider now tries to send the horse forward, "in hand," the four legs, not being trained to move properly in that position, will become disunited into twos or threes. The problem is, therefore, by means of the pirouettes, to educate the horse to be still further under the rider's control, the effects acting, at first, separately, the fore legs under the direction of the hand, the hind legs under the direction of the legs, and later, united, collected, assembled under the direction of both hands and legs.

The mobilization of the hind legs is obtained by means of the reversed pirouette, obtained either by lateral or direct effect.

The horse, being mounted and kept standing and "in hand," the trainer will ask the movement from left to right by the effects of the left snaffle rein and of the left leg against the flank. Meanwhile, the reins of the bit will keep the horse "in hand" and standing nearly still on its front legs.

In other words, the left snaffle rein draws the

head to the left, while the rider's left leg pushes the hind quarters to the right. The movement begins by the lifting of the left hind foot and its movement toward the right in front of the right hind foot. Thereupon, the right hind foot also shifts toward the right, and the first step is made. Repetition of these effects continues the movement, which, however, cannot proceed beyond four steps. The reversed pirouette from right to left is obtained by the same means, reversed.

If at first the horse does not understand the pressure of the rider's legs, the whip is used to augment their effect, by repeated contact near the leg. Very soon the horse learns to obey the pressure of the leg alone.

As soon as the horse executes the reversed pirouette calmly and correctly by the lateral effect, the rider asks the same movement by the direct effect. For this, the horse is held "in hand" either by the two snaffle reins or by those of the curb, but not by all four. The rider's left leg then asks the rotation of the haunches toward the right, while the right leg urges the horse forward. (Figure 17.) Finally, comes the same movement from right to left.

For the direct pirouette, the horse, being always "in hand," has to pivot on a hind foot, while the fore part of the body circles, let us say, from right to left. For this, first of all, the right fore foot lifts, crosses over in front of the left, and comes to the

ground about one foot to the left of the latter. As it comes to rest, it takes the weight in its turn; and the left fore foot, now unloaded, shifts still farther to the left, passing behind the right. Once more the left foot takes the load, and the right foot crosses as before. (Figure 18.)

Meanwhile, the hind legs have carried much of the weight of the fore hand. They have not, however, remained fixed. As the shoulders, after the first step of the right fore leg, travel toward the left, the right hind foot also lifts, moves to the left, and takes the ground in front of the left hind leg. Then, as the right front leg begins its second stride to the left, the left hind foot moves to a position two or three inches forward and to the left of the right, and takes once more the load. Again, as the left front foot shifts to the left, the right hind foot repeats its former movement to the left. This makes two steps around the imaginary circle of the pirouette. Repetition of these two continues the turn from right to left to a complete about-face.

Such is the mechanical motion executed by the horse. At this point I ask of the anatomists and masters of equitation, how is it that the pirouette is anatomically possible, if the scapular and the humerous are fixed to the thorax and the sternum, and the only movement of the fore legs is forward and back, without elongation? When the right fore leg has passed across the left, if it cannot lengthen before coming to the ground, then it can fall to the

Figure 17. PIROUETTE FROM RIGHT TO LEFT

Figure 18. ROTATION FROM LEFT TO RIGHT

ground only as the left fore leg rises. Therefore, is the theory of locomotion false which holds that one limb cannot leave the ground until after its mate has made contact. The sophists will reply that locomotion is always a succession of falls. Very true, but these falls operate successively upon the front legs as each in turn goes forward at the walk, the trot, or the gallop; there is no crossing over of the feet at each step, right to left or left to right.

Consider the case where the fall is greatest. The leaping horse is entirely out of contact with the ground. It comes to the ground at the end of the leap, with its two front legs extended; and immediately after, the hind legs also come down. Is this natural to the anatomy of the animal? Yes! But suppose that the horse finishes the leap with its two front legs in the position demanded by the pirouette or the half passage. What will be the consequence? Answer me, please!

Returning now to the effects employed to execute the pirouette, the front hand has to be unloaded, and the hind legs, which are the support and pivot, have to be loaded, especially the left hind leg. The rider must, therefore, carry the line of his body backward from the perpendicular, and also bear more heavily on the left haunch. The right fore leg, since it makes the longer step, has to be unloaded by a very slight effect of the right rein. But as this right fore leg is to travel over from right to left, the right rein must bear upon the right side of the neck, the hand

of the rider being carried to the left. If, on the other hand, the right rein were to operate alone, the result would be to carry the head too much to the right by the flexion of the neck. Consequently, the left rein has to maintain the head straight by the proper opposition. But, of course, the natural effect of moving the hand to the left is to swing the haunches to the right. And since the right hind leg must, on the contrary, pass leftward in front of its mate, the rider's right leg is brought an inch or more behind the girth, to forestall this movement and maintain the haunches as pivot and support.

The pirouette is to be executed step by step. At the beginning, one or two steps are sufficient. It is evident that the "in hand" position must be undisturbed during the entire movement, since it is only under this condition that this mobilization of the forehand has any real bearing on the future progressive education. Again I counsel, for the student, moderation, patience, perseverance; but more important still are positiveness, and quality rather than quantity, since quantity alone will have little value for the future training.

Other masters dictate this pirouette immediately after the "in hand" has been obtained, and before the reversed pirouette. I, on the contrary, first mobilize the hind legs by means of the reversed pirouette or rotation; and only after my horse well understands my effects of leg, do I begin the mobilization of the fore hand by the pirouette.

Forty years ago, noting the confusion in the minds of riders between pirouette and reversed pirouette, I renamed the latter, rotation — pirouette for the mobilization of the fore hand; rotation for the mobilization of the hind legs or croup. The change is, at first sight, not important. It becomes so only because it helps to clear the matter for beginners.

Even at first sight, the figure of the pirouette is easy to understand. The difficulty comes in executing it. Moreover, it is sometimes extraordinarily hard to make the beginner comprehend just the difference between pirouette and rotation. I have seen really intelligent men confuse them, month after month. Changing the name from reversed pirouette to rotation has helped not a little.

Finally, for the sake of one of my pupils in particular, who insisted that he was doing the one when he was really doing the other, I hit upon the following device.

Stand facing the edge of an open door, and take the knobs in your two hands. The hinges represent the horse's front legs; your legs are the horse's hind ones. Now pivot the door from right to left, passing your right foot between your left foot and the door, bringing it to the ground, and then bringing the left foot into its usual place beside it. This imitates the movement of the rotation. Taken from left to right, everything reverses, both motions and effects.

For the pirouette, turn your back to the door. The hinges are now the horse's hind legs, and your single pair are the horse's fore legs. Once more, swing the door from right to left, and follow it with your feet, by shifting the right foot across in front of the other, and then passing the left foot between the door and the right to its usual position.

Do not, I repeat, attempt to execute these figures on horseback, until you are sure that you understand precisely each detail. After that, if you proceed with moderation, the movements are so easy that, like everybody else who has tried it, you will laugh at the novices who have not yet caught the idea.

When the pirouette is properly done at the walk, it can be tried at the trot, but only after the horse has so far advanced in its education as to trot properly. The chief difficulty with the pirouette at the trot is to gauge accurately the horse's sensitiveness to each of your effects. Otherwise, it may cross its legs too quickly, and in order to avoid the tendency to fall, which is greater at the trot than at the walk, it is likely to change to the gallop, preferring to execute the figure at this gait rather than at the trot.

At the gallop, the pirouette should always be asked at the same hand or same side at which the horse leads — the right-hand pirouette to the right, and *vice versa*.

BACKING

MOTION backwards is not a gait, but merely one of the three movements which the horse executes by carrying rearward its center of gravity, and consequently a part of its weight.

The movement has given rise, among methodists, to a great diversity of theories, more or less impractical and absurd. Some writers recommend having two men to teach the action, one in the saddle, who pulls alternately on the reins, the other on foot, who touches chest or knees with a whip. Others advocate having the rider dismount, and, facing the horse's head, take one rein in each hand, and push backward, first on one and then on the other. If the horse does not then back, the trainer steps on the horse's fore feet as he gives the tug at the reins. What confusion! There is no real principle. How can one write concerning an art without greater knowledge of it!

It must be evident that, in order to make the horse back, the rider must carry backwards the center of gravity. Then, whenever a hind leg leaves the ground, it must go to the rear to receive the weight, which otherwise tends to fall backwards. If, at the same time, the rider's hand indicates to the horse that it cannot go forward, a front leg must follow the hind leg in diagonal. This makes the first step. To repeat the same effects of hand and legs obtains the second step.

The objection of the horse to backing arises from the stiffness of the muscles of the back at the region of the coupling. These muscles and the articulation can, however, be suppled by the preparatory work on foot, with the whip. The rider, standing at the horse's left, holds the two curb reins in his left hand, and touches repeatedly, with the whip, the croup behind the saddle, meanwhile making a moderate but repeated effect with the curb on the horse's mouth. Very soon, the horse backs. By repeating this work two or three times at each lesson, the horse soon learns to execute the movement, first with the trainer on foot, afterwards with the trainer mounted and employing his legs, supplemented if necessary by the whip. A saddle horse, well collected, should move backwards with the same step and cadence as forward.

CHAPTER XIX

THE FLEXIONS MOUNTED

For the flexions mounted, the rider lays the two reins of the bit on the horse's neck near the withers, their length equal; and holds the snaffle reins, one in each hand, with the free end of each passing between the forefinger and the thumb. The elbows are in contact with the body, but without stiffness. The hands are at the same height as the elbows, and, at most, three or four inches apart. The legs are in contact, but make no effect.

First, obtain contact with the bit. Immediately, yield contact, by opening the fingers. Then close the fingers, and again take contact. When you are sure that you can make the contact when and how you please, be satisfied for the present, dismount, and continue the flexions on foot. The second lesson of the same day repeats exactly the work of the first.

On the second day, mounted, take three minutes to complete the contact, two mniutes for the fingering, three minutes of fingering, two minutes of contact. Dismount.

On the third day, take, mounted, two minutes of contact, three of fingering, two of contact, three of fingering, interrupted by rests. Dismount.

For the fourth day, take one minute of contact

with the snaffle. Cross the left rein of the snaffle to the right hand, holding the two always equal. With the snaffle reins, maintain the position, head up. Take the reins of the bit in the left hand, separating them by the first two fingers, the ends passed over the forefinger and held by the thumb. Make contact with the snaffle. Shift the contact from snaffle to bit. Caress with the right hand; or, if that is occupied, with the voice. Continue this exercise for five minutes. For another five minutes, change the contact back to the snaffle. Do three minutes of fingering alternately with the two hands, followed by two minutes with the reins of the bit and snaffle both in the right, while caressing with left hand and voice. (Figure 19.)

For the second lesson of the fourth day, take the snaffle reins in the right hand, while the left hand holds the reins of the bit, but without effect. Make contact with the right hand. Shift the contact to the left hand, making the same effects. If, now, as you finger with the right hand, the horse champs the bit, begin fingering also with the left, then change to the right alone. Then follow with three minutes of fingering with the bit, helped out, if necessary, with the snaffle; three minutes with the snaffle; then two minutes with the bit. Dismount.

If the flexions have been done correctly on foot, this work of obtaining contact with the two bits alternately will be sufficient to secure, by means of fingering, a flexion of the lower jaw, which will,

Figure 19. THE HORSE STRAIGHT AND IN HAND

nevertheless, still further improve with the following lateral and direct flexions of the neck.

For the lateral flexion of the neck to the right, the trainer takes both curb reins in his left hand, his little finger separating the two, holding them of equal length, and short enough to give the proper contact and to supple the mouth by their fingering. In his right hand he holds the right snaffle rein only, the left lying slack across the curb reins. By carrying the right hand still farther to the right, keeping the same pull on the right snaffle rein, by repeated and progressive pressure, the horse's head will be turned to the right, pivoting at the region of the atlas. This inclination will be very slight at the beginning; but with repetition and caresses, the horse very soon learns to swing its head far enough to transfer at will the weight from one fore leg to its mate, dispose its center of gravity, and make the various changes of direction. During the lateral flexion with the snaffle rein to either side, the hand holding the curb reins should be kept immovable, and only the fingers give and take with the mouth. After the head has been flexed, it is to return to its straight position, little by little, by the progressive slackening of the snaffle rein, always at the will of the rider, never suddenly at the will of the horse. The lateral flexion is complete when the head turns to a right angle with the axis of the body and the frontal bone is perpendicular to the ground.

At the beginning of this work, in order to make the horse understand the compound effect, it will be necessary to carry the right hand over little by little and to cease the fingering of that hand. Do not demand too much flexion at first. The slightest inclination of the head should be rewarded, and the head turned straight.

The object of these flexions is to make it possible to shift the weight borne by either fore leg on to the other, always on the side away from the movement of the head. Thus, if the flexion is to the left, the load transfers to the right front leg; and *vice versa*. It may happen that, when everything is otherwise correct, the horse will paw the ground with the foot on the side toward which the flexion has been made. This is natural, and not a serious fault. Nevertheless, it is something which the horse does on its own initiative, not in obedience to the rider; and it is, therefore, not to be permitted. Moreover, the horse may learn to paw only, without making the flexion. Furthermore, the horse should not champ the bit under the fingering of the right hand. It should, at the indication of the right hand, complete the direct flexion of the mouth; while at the same time it makes the flexion of the neck to the left and returns straight again, and *vice versa* for flexion to the right, as shown in Figure 6 and discussed under "Descent of the Hand."

Do not, therefore, accept motion of the lower jaw to right or left. This is not correct. The flexion

of the neck to one side or the other follows the direct flexion of the mouth. If the flexion of the neck interferes with that of the mouth, the flexion has no meaning, and the rider who accepts this condition creates an asymmetry of the neck which is reflected throughout the entire body.

If the horse, at the beginning of the flexion of the neck to either side, throws its haunches toward the other, put it straight again, first by ceasing the flexion, and then by slight pressure of the legs. Do not, however, under any condition, kick.

Fillis is entirely logical when he objects to beginning the flexions of the neck before the animal understands the separate effects of the legs. I was myself of the same opinion until I experimented successfully with several horses at the beginning of their training. It is all a question of progression, of moderation in demands, and of perseverance. Without the least doubt it is possible to flex *de pied ferme*, without the help of the legs. I recognize, however, a difficulty, and to meet this I have advised placing the horse near a wall when the lateral position is being taught, in order that the presence of the barrier may help to keep the haunches straight. We have to consider, also, that the great masters of the art, because of their equestrian tact, are able to omit from their own training the work on foot. Nevertheless, they were themselves obliged to employ this at the beginning of their professional careers; they accept it as es-

sential for beginners, and they include it in their systems.

Only after both the lateral and direct flexions of mouth and neck are mastered standing, should the student proceed either to the mobilization of the hind legs by means of the ordinary rotation, in accordance with Baucher's method: or, following Fillis, should execute a form of the rotation in which the horse moves at a walk in such wise that the tracks of fore and hind feet make two concentric circles, with that traced by the hind feet outside the other. The latter is, in my judgment, the more progressive and the more rational.

When the beginner has mastered the reversed pirouette, he next "carries his horse forward" at a walk, the horse always giving the direct flexions of mouth and neck without altering its gait, and then asks the lateral flexions of the neck. I advocate making this flexion in such wise that the horse's head shall turn toward the wall of the ring. Otherwise, the pupil will think that it is his own leg which keeps the haunches from turning, when really it is the presence of the wall. When, therefore, the pupil tries to keep the horse straight away from the wall, he finds that he cannot do it, and must go back to the wall again.

Even when walking with the right side against the wall, the haunches of the horse tend to be displaced to the right at the lateral flexion of the neck to the left, so that it is by the effect of the

right leg that the rider corrects this tendency and keeps the spine straight. I do not, at the beginning, employ my legs to maintain the straight position; but going straight, if I ask the flexion, and the haunches have a tendency to swing (a tendency, only, I say), I do not wait until the haunches have actually swung — it would then be too late — but at the first slightest feeling in my seat, my leg is ready with its effect. But I do not kick. To kick a horse with leg or spur is to me blasphemy.

As the horse reaches the corner of ring or manege, the rider continues the flexion of the neck to the left, sends the horse forward by means of his left leg, and turns it by the effect of the right, as in the reversed pirouette done at the walk. In this, the rider is entirely rational, in complete accord with the nature and anatomy of the horse, the regularity of its motion, and what it has been taught from the beginning of its education. But I submit that, after having taught the horse, with its head to the left, to move its haunches to the left at the effect of the right leg, as in the reversed pirouette or rotation, it is the height of absurdity to turn a corner to the right by means of right rein and right leg, a violation of the nature of the animal, a contradiction of all that it has been taught, and the reason for those terrible tempests of revolt so often experienced by Baucher and Fillis, when they asked movements, by lateral effects, when the r mounts were moving in diagonal action at walk and trot, while they used

a diagonal effect with the horse at the gallop, which is a lateral gait.

These lateral flexions of the neck, with the direct flexions of the jaw, are to be done at the walk, not too continuously, but occasionally only, and with frequent return to the direct flexions of mouth and neck. I emphasize this, because the horse is built to travel straight — an axiom of the reasoned equitation — and only occasionally to alter its natural posture.

When these lateral flexions can be done, to either side, at a walk, they are repeated in the same way at a slow trot.

When the animal executes them properly at the trot, the trainer should begin passing a corner to the right, with a half lateral flexion to the left, while he bears down his weight on his own right buttock, but without relaxing contact with his legs.

I recommend to the student, at this point, to take note of his own progress. The work on foot has given him the power to see with his eyes and to feel with his fingers the action which he has asked of the horse. Equestrian tact has been born in him. The problem is now to keep this tact developing progressively. The requirements are quality, not quantity, perseverance, honesty, patience, generosity.

In dividing the time for this work on the flexions, it should be understood that the horse is not to be kept in one fixed position for the entire time

indicated, but is to be relieved by intervals of freedom. My own experience is that a few steps forward, light "in hand," or a few moments standing head up, without the effect of the reins, but by the horse's own free will, is a great rest. Without some such respite, the trainer asking the flexions too continuously, the horse becomes discouraged and nervous.

Very probably, too, the rider's own action of hand and fingers will not be altogether correct at first. But practice is the road to perfection, and as I am convinced that my theory is correct, I urge the student to be patient and perseverant. Furthermore, I myself entertain always a friendly sentiment toward the horse; and I try to inculcate this feeling in the mind of the student.

RENDERING THE HAND

To "render the hand" is to relax the tension of the reins, either by movement of the arms or by loosening the grip of the fingers. It is not the same as to "abandon" the horse, as already discussed. Since, in equitation, the various means act by strength of effects rather than by effects of strength, they tend to lose their effect the longer they are continued. We must, then, cease the effect for a longer or shorter time, in order to renew the sensibility. Raabe, Baucher, and Fillis, although they evidently themselves employed the device, seem not to have thought it necessary to discuss or teach it.

I recognize, in rendering the hand, three different actions.

The first occurs when the horse has his head flexed at the axoid articulation, and the muscles of the neck, being under restraint by the tension of the reins, begin to show fatigue, stiffness, and a failure of sensibility. But if, after a time, the rider eases this tension, either by advancing the hand or by letting the reins slip in his fingers, he allows the animal to rest his muscles, and renders his hand in the first sense.

The second way of rendering the hand depends on fingering. When the head is flexed, as in the first instance, the rider's control over the neck is by way of the lower jaw. But since the bars are of uncertain sensibility, if the mouth remains closed notwithstanding the pressure of the bit, the contraction at the *tempero-maxillaris* articulation will be communicated to the alto-axoid. The result is still greater fatigue, stiffness, and loss of sensibility. But when the neck is flexed and the bit in contact with the bars, pressure of the fingers on the reins opens the mouth, while cessation of this pressure allows it to close. This cessation of the pressure which has flexed the lower jaw is rendering the hand in the second sense. The repetition of this flexing and rendering constitutes fingering.

"Fingering" is the only possible translation of the French, *doighter*, used by musicians to mean the delicate sensibility by which they distinguish

Figure 20. TO RENDER THE HAND

the quality of pressure which they exert upon their instruments to make them produce the exact quality of sound which renders the musical phrase. Their instruments, however, are machines which do not tire; whereas the horse is a creature with bones, muscles, nerves, and will, capable of fatigue, and needing relaxation, lest the will move nerves and muscles to resist. It is, therefore, to prevent the state of revolt occasioned by fatigue that we must, though always retaining the contact, render the fingers, so that the horse vibrates under the rider's control, without excessive fatigue.

The third sort of rendering the hand consists in allowing the horse to place its head and neck in a position other than that which they have been holding under the rider's control. The horse has completed a series of movements, head in position and fixed point at the atlas region. The contraction starting from this point tends to create weariness, so that the horse needs to rest this region. The rider, therefore, by lengthening his reins, lets the horse extend his neck. The fixed point shifts from the atlas region to the shoulders, and the horse rests. This action of rendering has to be learned by the horse, first standing; then progressively at walk, trot, and gallop. (Figure 20.)

CHAPTER XX

PLACING THE HORSE AND THE VARIANTS FROM THE "IN HAND"

After the discussions of the preceding chapters, there still remain certain matters, which either have not been touched upon at all or else require still further elucidation at this point.

PLACING THE HORSE

To "place the horse" is to put him into whatever position he needs to take in order to understand or to execute the particular movement which is next to be asked of him. This is really one of the difficult parts of the art of equitation; but the esquire who understands placing has always the assurance that the following movement will be correctly performed, since it is by the proper position that the rider appeals to the animal's intelligence and at the same time paralyzes any sign of insubordination. The principle seems paradoxical to the rider who merely experiments, but for the experienced master, the position thus taken by the four legs of the animal is the only one which supports the weight equally on all its members. It is, therefore, the *sine qua non* of equilibrium, without which the movement is impossible.

Nothing, therefore, is more invariably true than

the principle enunciated by Baucher: "The position gives the movement." The fact is, a horse, well conformed, healthy, and well mounted, when under transmitted equilibrium, finds it much more difficult, physically and morally, to alter that state and refuse the movement asked, than to obey. The proof is that the same movement, asked of an inferior animal, will result in revolt.

It is evident, then, that the horse is compelled, by the condition of transmitted equilibrium, to seek instinctively that state of balance which involves a less physical effort in executing any change of gait or direction, than when it is not in balance. After this position of balance is given by the rider, the horse will not refuse to execute a movement which does not compromise the condition. This is the reason why the competent esquire, who knows how to place his horse preliminary to the movement, never has a restive or disobedient animal. What is more, if a well-educated horse, accustomed to the position of equilibrium, is by circumstances put out of that state, it is simply lost and does not know what to do with itself. But, of course, riding of this sort is no offhand matter. It requires study and knowledge, time and self-control.

But, unfortunately, there is always the rider who, for example, asks of his mount the turn to one side at the trot, but neglects first to place the horse in the position which makes the movement possible. The animal necessarily refuses. To whom belongs

the fault? Obviously, to the man. Yet it is the horse who is blamed and punished. But will the punishment change a law of nature? The more the poor brute is abused, the less is it correctly placed to execute the movement. No horse will ever refuse what is asked, when its rider has previously made sure that the placement is right.

A standing horse is correctly placed when the four legs, perpendicular to the ground, form a rectangle. In this position, each leg bears one quarter of the entire weight. Very few horses, however, take and keep this position instinctively. They have to be trained to it. In order, then, to place the horse, the rider needs to understand the diagonal effect for standing, walking, and trotting, and the lateral effect for the gallop, since these effects are the only means for correcting a wrong position and for maintaining the horse straight.

THE STRAIGHT HORSE

A HORSE is said to be straight when the whole spinal column, from the atlas to the last sacral vertebra, is precisely in line.

For the spine of a horse is like the keel of a boat. One could not steer a boat with a crooked keel, without strain on the hull and a waste of force on the rudder. Even more true is it for the horse that, with a crooked spine, the four legs will not carry equal weights, and the steps and strides, with their resultant, the gaits, will not be square and equal.

Therefore does the reasoned equitation accept as *sine qua non* the two basal principles, "straight" and "forward." Indeed, if the horse is not straight, it cannot go forward, but advances in the direction in which the spine points. Then are the steps and strides not equal, the coupling yields more to one side than to the other, and carries with it the pelvis, the haunches, and the hind legs. On the other hand, when the spinal column is straight, the coupling gives equally, the pelvis becomes the center for the motion of the two hind legs, the fore and hind parts of the body act in unison, collection and assemblage become possible, and, equilibrium being secured, the center of gravity finds its natural place in the medial plane. In this condition, strides, steps, and gaits become equal and square, the horse suffers less fatigue and wear, and continues in the best condition to develop its natural and instinctive forces.

Very few riders, amateurs or masters, are able to put a horse exactly straight, and to keep it so while they carry it forward or backward. Yet nothing whatever can be done properly by a horse which is not straight.

FORWARD

En avant, as the French say, means not only forward, but in addition, the condition of the horse when in contact with the bit and ready to advance frankly and without hesitation at the effects of the

rider's legs. One often hears a master say, "This horse is not enough forward," meaning that the animal is behind, not upon, the rider's hand.

Of the two equestrian axioms, straight and forward, this is the more important, since it is easier to have the horse straight when going forward than when standing still. It is from this state of forwardness that everything else becomes possible; so that, very often, even after a horse is far advanced in its training, it has to be carried forward again, before its education can be continued successfully. From the beginning of the equestrian art, by the oldest masters, this state of forwardness has been commended. I am, therefore, of the opinion of Fillis, who reiterates, "Forward, again forward, always forward." One may turn the rudder of a boat as much as he likes, but if the boat has not way, the rudder is without effect. It is the same with a horse; first forward, then direction.

Unfortunately, it is very much easier to keep the fore hand straight and forward by the natural tact given to a man's hands than to develop in his legs the purely artificial tact which comes only with long practice. Nevertheless, a horse is neither forward nor straight, when anything is wrong or crooked at the coupling.

THE REIN OF OPPOSITION

Both the reasoned and the scientific equitation use the term, "rein of opposition," to mean whatever

effects have to be used to counteract the fault of a horse which is unequal in its movements, and which refuses to be put straight or to stay straight. The matter is seldom taught; and the causes, effects, and corrections have been quite ignored. Authors who have mentioned rein of opposition have not explained it clearly. Frankly, I suspect that very few men have really understood it.

Unhappily, very few horses are straight when mounted, for reasons which are discussed in part under the captions, "Weight" and "Seat." But the horse with a tendency to have the spine crooked tends also to stride unequally, in order to compensate for the first defect. This we correct by means of the rein of opposition.

Suppose, for example, that, instead of walking, trotting, or galloping straight, a horse turns its haunches to the right. The haunches are apparently at fault, so we will start our problem from them. The masters tell us to push the haunches to the left with the right leg. This is an error, in that it attacks the consequence and neglects the cause. The real trouble is that the left front leg is making a shorter stride than the right. The left hind leg has, therefore, too little space for its step, and comes to the ground too soon and too near the right. This pushes the back part of the body to the right, and throws the line of motion of the right hind leg out of parallelism with the axis of the body. The rider can, indeed, for the moment, push

the croup over with his right leg. But the effect soon evaporates, and the haunches return to their former place. It is all labor without end, not a corrective.

But why does the left front leg not gain ground equally with the right? For a great many reasons, which are all, at bottom, one. The weight is more upon the right fore leg, so that this has to reach out farther at each stride to check the forward fall of the body. The point, then, is to equalize the load on the two front legs. This we can do by pressing with the right rein against the right side of the neck so as to throw the head over to the left, until the two fore legs are loaded equally. Then the left fore leg will reach out farther, and allow room for the full stride of the left hind leg. This, in turn, will no longer push over the right hind leg, and the horse will travel straight.

But, to go back another step, why was the weight not equal on the two fore legs? The answer is that the spine was crooked. By using a rein of opposition on the side opposite to the shorter stride, we correct the wrong position of the haunches. This means of placing the spine straight will be understood by a horse whose progressive education has gone so far as to include the pirouette.

THE REIN OF CONTRACTION

THE rein of contraction is a complex and special effect of a rein, which, bearing on one side of the

neck, pushes the shoulder toward the opposite side.

For example, the rider desires to turn his horse to the right. Holding one rein in each hand, the right hand immovable, he passes his left hand across, above the right, so that the rein bears upon the muscles of the left side of the neck. The horse, therefore, contracts these muscles. But, since his head is held straight by the fixity of the right rein, the result is to pull the left fore leg over toward the right, in front of its mate. But as soon as the left leg takes the weight, the right leg also steps toward the right. Repetition of the contractive effect will compel a second similar step; and the body will turn toward the right impelled by the hind legs. In order for the horse once more to travel straight ahead, the rein of contraction ceases its effect and returns to equality with the other.

This action of the rein of contraction is what is commonly called "guiding by the neck." I do not, however, understand that the expression, to "guide by the neck," must always mean the rein of contraction. With the rein of opposition or with the rein direct, the horse is also always guided by the neck. But these are really three different effects.

IN HAND

A HORSE is said to be "in hand" when the bars are in contact with the bit with which the rider's hand communicates through the reins.

From the invention of the bridle, the "in hand" has been the subject of the researches, writings, methods, and principles of the masters of every epoch and age. A horse so placed has its head perpendicular to the ground, and therefore parallel to its fore legs. But, unhappily, the myology and the physical structure of the horse, and the principle of gravitation, have not always been as well understood as now by these masters; with the result that each one of them has created his own "in hand." When we consider the saddles which force the rider to sit bolt upright with the legs extended downward like crutches, the severity of the ancient bits, the heaviness of the horses, and the movements demanded of them for tourney, carrousel, and battle *corps-à-corps*, we understand why the riders and masters favored so exaggerated a position. Moreover, in earlier days the horse carried his neck flexed at the fourth vertebra, more to show its elegance than for reasons of utility. It is only in our own time that the development of racing has emphasized the idea of speed. and, ignoring elegance, has altered the "in hand" to the position which, while favoring obedience to the rider's effects, does not interfere with the action of the animal mechanism.

All modern uses of the horse for riding ask the "in hand." The scientific equitation asks also that the head shall be "upon the hand." Baucher required the horse to be "in front of the rider's legs

and behind the hand." Raabe asked the horse to be "before the rider's legs and in the hand." The scientific equitation calls for a horse "before the legs and upon the hand."

UPON THE HAND

WHEN the horse is "upon the hand," there is a state of contact of the lower jaw upon the bit which makes possible the communication of sensation in both directions by way of the reins, between the horse's bars and the rider's hand.

Orator and musician must be in communication with their hearers by means of voice or instrument. It is not otherwise with the horse. From the bit, the sensations pass along the nerves to the brain, the will is formed, and the appropriate message is returned along the nerves to the muscles. These, contracting upon the joints, produce the movement. But as soon as this contact ceases, there is an end to the series of sensation, transmission, volition, and act. The horse passes under the control of its own instinctive forces, and is no longer subject to the will of the rider.

It is like the blind man led by his dog. So long as the cord between them remains tight, so long will the man follow it. But if the dog stops, the cord slackens; and the man also stops, uncertain and hesitating, because communication is broken. The case is exactly the same when for the blind man we substitute the horse, and for the dog the rider. The

rider ceases to impel the horse forward. The reins are loose. The contact is broken. The horse stops, not knowing where to go.

But if this state of contact between hand and mouth is important for the ordinary equitation, it is a great deal more necessary for the scientific, since this is founded upon the principles of equilibrium, collection, the assemblage of forces continually united in the medial plane and establishing the center of gravity.

From the earliest days of equitation, every rider has studied the "in hand" by means more or less rational. But so many mistakes have been made that I must try to explain the precise nature of the first element of the "in hand," the contact. It is, however, a difficult matter to explain a feeling in words, and though comparisons are useful to illustrate a point, I shall have to ask the indulgence of reader and student.

I touch elsewhere upon assemblage and collection.

FORWARD OF THE HAND

A HORSE is forward of the hand, if, on its own initiative, it goes forward against the bit, according to its own will, disposition, or temperament, instead of conforming to the impulsion of the rider's legs. If this exuberance is not the result of unsoundness, viciousness, bad conformation, or bad habit, it is more a merit than a defect in a saddle horse, since it

is easily remedied by proper education, while the underlying good quality still remains.

BEHIND THE HAND

A HORSE is, on the contrary, said to be behind the hand when it is loath to take contact with the bit. This may occur for either of two reasons. A young horse may have become discouraged by being ridden under a hand without tact, which has maintained the contact too long, or has shaken too severely. Or the trouble may be weakness of hocks, haunches, loins, spine, or of the *ilio-spinalis* muscle or the great pectoralis.

Evidently, if the horse lacks strength in those parts of its mechanism which drive its body forward, it will hesitate to go forward against the bit; and will, in consequence, be behind the hand. Similarly, the horse which, at the beginning of its training, was willing to enter into contact, but has become discouraged, fearing the rider's tactless hand and the resulting pain, is really in an analogous condition to the weak horse. In either case, the fault must be remedied, since an animal which the rider cannot send against the bit is at all times ready to stop and enter into revolt. If the horse is behind the hand because it is badly conformed and weak, training is the cure. But if the horse is well conformed and strong, and still stays behind the hand, the remedy is education — more often for the rider than for the horse.

It is, then, somewhere between a horse that is forward of the hand and one that is behind, that we find the ideal condition, "upon the hand." The first two sorts of horse are out of the man's control. The one because it takes the initiative for itself; the other because it does not respond to that of the rider. The third is under control, because the forward impulse of the rider's legs is received by the rider's hand, which, by means of the fingering, accepts it and lets it pass forward, or denies it and sends it back, accepts and raises, accepts and directs.

The first sort, therefore, pulls on the bit, because it pushes by its own will. The second sort does not pull, because it cannot or will not push. The third pushes just so much as is indicated by the legs of the rider, who, by his fingering, accepts or prevents the pulling. The first horse will push, pull, and run away. The second horse will stop, kick, and rear. The third cannot perform other movements than those asked by its rider.

LIGHT IN HAND

Léger à la main has long been used by masters of equitation to describe a horse which responds calmly and readily to the gentle and progressive effects of the rider's hand.

But the horse light in hand is not at all the animal which escapes the contact of the bit on its bars by shaking its head in every direction. Nothing is easier for a human being than to be a law-

abiding citizen on a continent by himself. Very possibly the same man would be a criminal if he were living in the society of others. Likewise, a horse which refuses contact with the bit cannot be directed. Nobody knows in advance what it will do, acting by itself and without means of control. The horse which is light in hand accepts the contact of the bit, without altering its speed or gait, its head slightly out of the perpendicular, its neck directed upward from the withers to the atlas region, and opens its mouth if the rider's hand insists on the contact, but without changing the cadence of its step. But if this lightness in hand is a test of the quality of the horse's education, it is also a test of the rider's skill. Only with accuracy of seat will the rider's legs act with precision to obtain the propulsion forward. Only with accuracy of seat will the hand judge correctly its own effect upon the mouth. If hands and legs are used to correct faults of seat, the horse cannot be light in hand. Bad seat, bad hand, bad legs; good seat, good hands, good legs; accurate seat, accurate hand, accurate legs — it all sums up in the words, "equestrian tact." Any horse, well conformed and well ridden, is always light in hand.

TO LIGHTEN A HORSE

So Newcastle translated *alléger son cheval.* Since the horse, at the beginning of its education, does not understand the effects of hands and legs, and is

not wonted to the pressure of the girths and the weight on its spine, it contracts its body and is heavy. But a horse of good conformation, breeding, and temper is naturally energetic, so that it is very easy to lighten such an animal by a wise and progressive education. A more ordinary horse, without these native qualities, requires the training of an able master. Yet any horse can, by education, be sufficiently lightened to be mounted with pleasure.

The old equitation advocates for a heavy animal, great vigor and energy in the effects of hand, and still more of legs, helped out by spurs. Nothing can be more wrong. If the horse is heavy because it does not understand the meaning of hands and legs, and therefore contracts itself, surely it is not by still severer effects that the horse will be cured of its apprehension. On the contrary, it is only by especial lightness of effects, applied cautiously and progressively, that the trainer will make these so pleasant to the animal that it will receive them without fear, contraction, or heaviness.

Thus we come back always to the same principle, strength of effects, not effects of strength: intelligence, not brute force. The rider who understands and puts into practice the principles of an equestrian method with a heavy horse, will very soon find himself with a light one.

THE INTELLIGENT HAND

An intelligent hand is one which, at all times, under

every condition and circumstance, no matter what the motion, action, gait, or speed, the state of obedience or revolt, understands instinctively every impression that comes from the horse's mouth, and is ready at once to accept, refuse, counteract, or suppress both the effect and the cause.

The English expressions, "fine hand," and "light hand," suggest the skill of the pianist or the prestidigitator, whose tools have no will of their own. The intelligent hand responds to and controls the vital forces of a creature animated by the will to live. The hands of the rider are two vowels of the equestrian alphabet; the legs are two consonants; accuracy of seat unites the four letters into a word of the language with which rider and horse communicate. If a letter is lacking, or if the word is not formed, then there is no sense.

All this is no dream, no illusion of the mind. It is a fact, a reality; albeit, it is understood only by the master who knows the language and appreciates the significance of each letter and each combination, as the educated horse understands them. A fine hand means nothing. A hard hand is a fault. An intelligent hand is all in all.

ACCORD

A RIDER is in accord with his horse when his aids are in correct ratio to one another and to the movement which is required of the horse.

The rider's hand retains, sustains, and directs

the forward impulse of his legs. But if the legs produce a greater impulse than the hand can receive, the center of gravity will pass to the fore hand. Contrawise, if the hand produces a greater effect than the legs can overcome, the center of gravity will shift to the hind legs, and the forward impulse will be lost. In either case there is lack of accord. Again, suppose that the rider wishes to carry his horse forward at a walk. If thereupon the legs produce so powerful an effect that the hand cannot receive it, the horse will take the trot. Legs and hand, rider and horse, are not in accord.

Not only, however, must the rider's effects be in accord with one another in order to obtain the gait or the movement asked, they must, in addition, be in accord with the nature and energy of the horse. The rider, therefore, to obtain any particular movement, has to ask that particular movement by adjusting accurately his effects to that movement, not to some other. Otherwise, horse and man are not in accord, because the man's effects do not match his special demand.

THE CENTER OF GRAVITY

THE center of gravity of any body is that point upon which the body will balance in all positions.

The balance of our own bodies upon the legs, which support the weight and prevent it from falling to the ground at each step, is so familiar and instinctive that we fail to appreciate it or to reflect

on the consequences if that balance were to be for one moment destroyed. Gravitation is really an essential condition of our natural existence, like the air we breathe. Its force is precisely measured by a body's weight.

Every animal, therefore, is under the influence of two forces, the inert pull of gravity, and the active force of its own muscles. So long as the animal is recumbent, its weight is immobile, and it is in a position of inertia. To change this position under the first force, the second, the contractive force, is needed. This is developed by the muscles, by a tension sufficient to support the weight immobile upon the legs. But in order to propel the weight in any direction, the animal needs a contractive force greater than that needed to keep the weight immobile. Therefore must the muscular force be sufficient for both the weight and the velocity.

Sir Isaac Newton teaches that the motion of an animal is a series of falls, received and prevented by advancing one leg after the other. Since the force of gravity is constant, the velocity does not affect it. But the velocity does affect the momentum, which varies directly with the frequency of the falls. The greater the velocity, the more do the bases of support multiply their action; and consequently the flatter becomes the trajectory, and the more perfect the equilibrium of the forces involved.

With horses of good conformation, the center of gravity is well established. But with horses of

deficient conformation, its position is variable, and this hinders the union of the animal's forces at any center. Though its proper place is at the middle of the spine when the horse is collected, it seldom is actually located here until after the horse has been trained. The beautiful conformation only makes the training easier. But, of course, the horse has also its instinctive center of gravity, when at liberty, without a rider to direct its movements, gaits, and speed.

With these principles in mind, it becomes easy to understand the defenses of the horse. If the horse kicks, rears, or runs away, the cause is always the wrong location of the center of gravity. Kicking means that the center is in the shoulders; rearing, that it is in the haunches; running away, that it is in the spine, but too much forward of the middle.

The constant object of the rider is, then, to keep the center of gravity where it belongs. Equitation cannot completely alter bad construction of the locomotor organs; but it can ameliorate the effect by modifying the cause. By uniting the animal's forces at the proper point, one can paralyze the defenses of a badly conformed animal. This is the reason why the masters have maintained that a well-conformed horse cannot defend itself, without destroying the harmony of its conformation, and at the expense of a very great increase of muscular effort, to give the power needed to displace the center of gravity.

For these reasons, also, the scientific equitation insists on the absolute necessity of giving to the horse a factitious equilibrium in place of that which comes by instinct; not only in order to prevent disobedience, but also to remedy faults of conformation by a due combination of the animal's forces at the center of gravity. The entire education of the horse is, indeed, toward this result.

When the center of gravity is established, the horse is in a condition of equilibrium. The weight of the man, combining with that of the animal, becomes, by its position, an essential element in maintaining the center of gravity, in direct ratio to the displacement of this new force, forward, backward, to right or left of the perpendicular. If the man's weight shifts forward, the excess compels the horse to advance a base of support in order to prevent the fall. In this case, the center of gravity does not alter; the change is of the momentum. It is the same with movement backward, or to right or left, always supposing that the horse keeps its state of equilibrium.

CHAPTER XXI

THE ASSEMBLAGE

By means of the foregoing work, which has been only preparatory, of the flexions, the mobilization of the fore and hind hands, and the movements backward, the cavalier has mastered the use of his various means, and the horse has come to understand their effects. The rider can now obtain from his horse the position of "in hand." Starting with this position, and using all the effects together, the rider should now be able, by means of the collection or assemblage, to obtain an equilibrium in which all the animal's forces are reunited at a center of gravity, situated exactly beneath his own weight, which, in its turn, bears equally and perpendicularly on the spinal column of the horse.

This position, obtained and continued at will by the cavalier, is the great ideal of equitation, since it gives immediate and complete control of the animal by the man. To the young trainer, at first sight, it appears difficult. Yet it is not. If one has followed the progression of the flexions and mobilizations, and has obtained regularly the "in hand" position, he will also secure, without too much difficulty, the subsequent position of equilibrium. But, of course, the conformation of the horse, both

physical and moral, also enters very seriously into the problem.

In the preceding work of the flexions and the mobilizations, the cavalier has used the effects of hands and legs separately. But to obtain the state of equilibrium by means of the assemblage, he must employ hands, legs, and weight, together. This action is often called "effects of *ensemble*," since it requires the equalization of the forces of the horse, not only to support its own weight, whether at rest or in motion, but also to carry the added weight of the rider, and is brought about by accordant effects of the cavalier.

In short, the separate effects make possible the effects of *ensemble*. These effects of *ensemble* produce assemblage. The assemblage gives the state of equilibrium, which is the equal balance of the entire mechanism.

From the beginning of equitation, this state of equilibrium of rider and horse has been the subject of researches and theories, more or less practical. Of these, Baucher's is the most reasonable. Moreover, this grand master has proved experimentally the existence of this equilibrium, and the fact that it is produced by the assemblage. I give here one of Baucher's tests in the form in which I have several times repeated them for myself.

An ordinary saddle horse, properly trained but not practiced in the demonstration, weighs one thousand pounds. I place him, without saddle or

bridle, with his hind legs on one of two platform scales and his fore feet on the other. If he took naturally a state of perfect equilibrium, he would thereupon register a weight of two hundred and fifty pounds with each foot, five hundred pounds at each end.

But as a matter of fact, the forward scales register 612 pounds; the rear scales only 388. The horse will not distribute his weight equally between the two pairs of limbs, unless his naturally wrong position is rectified by the demonstrator.

For this purpose, I add a twelve-pound saddle and three pounds of bridle; making the new weight 1015 pounds, which the horse distributes, ten pounds in front and five behind. I take the reins of the bit and raise the animal's head. At once the weights change, and become more nearly equal. The front scales now show 522 pounds and the rear 493. Fifty pounds has shifted to the hind legs.

Still keeping the head up, with the aid of a whip, I place the hind legs side by side, and both perpendicular to the horizontal line of the horse's spine. All the while, I bear lightly on the bit and flex the head at the atlas region. The scales now indicate 510 pounds on the fore legs, 505 pounds on the rear ones. This difference of five pounds arises from the impossibility for a man on foot of keeping the front legs exactly perpendicular upon the scales or obtaining perfect flexion at the atlas region. Allowing for this small difference, we have here an

undeniable proof of a state of transmitted equilibrium imposed upon the animal by the man.

The demonstration is still more striking when the horse is mounted. I weigh, dressed, 172 pounds, a total weight of 1187. Letting the reins lie loose, I find that the scales read 722 and 565 pounds. I take the reins, flex the horse's head and neck to bring the animal "in hand," and at the same time, by the contact of my legs, I bring the animal's hind legs into the perpendicular position. The scales now read, in front 598, behind 589, a difference of only nine pounds. In this particular case, the horse had become pretty nervous from having his feet on the unsteady scale platforms; and in order to keep him quiet, I had been neglecting my own position, and leaning slightly forward, for the sake of loading the fore legs and keeping them still. As soon as I rectified this, and sat with head and body erect, the forward scales read steadily 593, while the other oscillated between 592 and 594 with the action of my legs in trying to keep the horse perfectly quiet. It was a convincing demonstration. Moreover, by leaning forward or backward with the head very erect, I could always take thirty-five or forty pounds from the reading of either scales and add it to the other.

For the benefit of any person who wishes to repeat these tests, I add certain practical suggestions from my own experience. I find that one of the great difficulties is to keep the horse calm and

still upon his legs, so that I lost a great deal of time and the data were less accurate. To remedy this, I built a stall, three feet by twelve, with partitions four feet high. The scales, I placed under ground, the platforms level with the surface, and over them a thin layer of earth or tanbark to give the horse confidence and to keep it from slipping. If, however, the apparatus is set in a floor, solid wooden platforms should be built upon the scales, at the correct distance apart, and surfaced with tanbark or dirt. All these extra weights will, of course, have to be allowed for. The indicators of the scales should be outside the stall.

It must not be thought, however, that Baucher, in devising this experiment, or the author in repeating it, had any idea of having it used as a means of training the horse to take the correct position. Its only object is to prove to the student that the state exists, and that it is possible to obtain it by means of the effects and aids.

The deductions from the experiment are highly important. It proves the necessity of the work on the flexions of mouth and neck, since without these there would be no way of obtaining the "in hand." It proves, also, the necessity of mobilizing the front and hind hands, since without this the horse could not be placed with its legs vertical, and therefore the weight could not be made equal on the two scales. Finally, it proves the necessity of the suppling of the loins by movement backward,

since otherwise the hind legs could not be brought into the perpendicular relation to the spine.

So long as the horse remains at rest with his four limbs perpendicular, the state of equilibrium can be demonstrated. But with the horse in action, only the eye of the spectator or the equestrian tact of the rider, through his seat, can detect it. The spectator can see the four legs leave the ground and return, two by two, diagonally at walk, trot, and movement backward.

The rider, under these conditions, feels in his seat the squareness and equality both of the different strides and of each step. The horse gives a light and agreeable contact upon the hand, the head and neck are perfectly steady and yet firm, while the rider feels that, with the least tension on the reins, the neck will flex like an elastic band. All the time he feels in his seat that, with the least shifting of his weight or the slightest alteration in legs, hand, body, or head, the equilibrium will vanish. The animal moves between the rider and the ground, rhythmically. Every joint is supple, and every part of the mechanism does its task with power, freedom, and in perfect synchrony. Fillis, the grand master, is right when he says, "The rider feels as if the horse were flying." But Baucher, the great dead, is also right when he says, "The sea is calm, but full of rocks!"

Unhappily, this state of equilibrium tends always to be disturbed in consequence of the various

positions taken by the horse as he executes his great diversity of strides, steps, gaits, and movements. The rider must, therefore, by means of his effects of *ensemble*, be always checking this tendency, or restoring the equilibrium as soon as it escapes. When the horse is standing still, the rider will feel this escape of the equilibrium in his bridle hand. But when the horse is in motion, this feeling comes only through the seat. An able esquire reëstablishes the equilibrium by the accuracy of his seat, economizing hands and legs.

These effects of *ensemble* are employed most efficiently just before the demand for a new movement, a new direction, or a new gait; and also to maintain the equilibrium during the succeeding movement without change of speed or gait. All this is in accord with the principle of Baucher, who created the effects of *ensemble:* "The position gives the correct movement; the movement should never give the position."

These effects of *ensemble*, employed on a well-trained horse, are, however, virtually imperceptible to the onlooker.

PART III

THE SCIENTIFIC EQUITATION

CHAPTER XXII

THE DIAGONAL EFFECT

THE name, "High School," has long been used and is still employed to designate a system of education which trains a horse to execute in the ring of a circus the low and high airs and the various figures of manege. It is a special kind of equitation, for which the state of equilibrium is not important. Baucher, Fillis, Franconi, and other civilian masters of the art have exhibited their horses in the circus, not alone for the immediate financial profit, but still more to make their systems known and appreciated. It was, in fact, from the circus that Baucher and Fillis were called by various European governments to teach their systems to army officers.

These masters, however, had already accepted the anatomical principles of Benton, Borelli, and Bishop, who, in their discussion of animal motion, emphasize the fact that, at walk and trot, the horse advances by the diagonal movement of its limbs. But in accepting this doctrine of locomotion, these masters at once comprehended that the lateral or direct effects of the two older schools are in flat contradiction to the newer ideas of horse anatomy. They found it necessary, therefore, to

create the diagonal effects, in order to be *en rapport* with the movement in diagonal biped.

The horses exhibited by these masters executed all the movements of the high and low airs, but were maintained continually in the state of equilibrium; and they had gait, speed, and manners. So, to emphasize the distinction between their systems and those of the circus, the masters gave to their principles the name *équitation savante.* The term has been accepted by horsemen the world over, both in the armies and outside. Unfortunately, the only translation into English seems to be the very inadequate "scientific equitation."

As a matter of terminology, the right diagonal biped means the right fore leg and the left hind one; the left diagonal biped, left fore and right hind. Consequently, the right diagonal effect has to mean the effect produced by the right rein and the rider's left leg; while the left diagonal effect is that of the left rein and his right leg.

The equilibrium, which is the foundation of the whole scientific equitation, can be obtained only as the result of two forces opposed to one another, the one pushing the horse forward and the other holding him back. The first of these forces arises from the effect of the rider's legs: the second from the effect of his hands by way of the reins and the bits. If, let us say, the rider exerts ten degrees of effect with his legs to send the horse forward, and at the same time exerts ten degrees of effect with

his hands to prevent this movement, the horse, between these two forces, must concentrate its native powers, and establish a center of gravity. The result is equilibrium, that is to say, balance. The effects of the legs are effects of impulsion. The effects of the hands are effects of retention. Thence arises the equestrian axiom: Equilibrium is the consequence of effects of opposition.

Suppose, then, that the horse is being maintained in equilibrium between ten degrees of impulsion and ten degrees of opposition. If, now, the impulsion is increased from ten degrees to fifteen, the opposition still remaining at ten, the horse must move forward, with the condition of equilibrium still maintained.

Precisely here lies the difference between the scientific equitation and the lateral or reasoned. The former, to produce movement forward, keeps the same opposition as before, but increases the impulsion. The others cease the opposition, and thereby allow the equilibrium to disappear. These last cannot do otherwise. They are employing the lateral effect only. Therefore, they cannot maintain the effect of opposition against a mechanism which is driving itself forward by a diagonal action. Only the diagonal effect can maintain opposition while the animal moves in diagonal.

The reader will note that it is always from the fore leg involved that the right or left diagonal biped takes its name. This, in my opinion, is a

mistake. The hind leg is the one which gives the impulse and is the cause of every movement. The action of the fore leg is merely the consequence. It would, therefore, have been more logical to have named the bipeds from the hind legs; and more in accord with the equestrian maxim, "Forward, forward, always forward." This means impulsion, and impulsion is possible only by the effects of the rider's legs acting on the hind limbs of the animal.

It must, of course, be understood that when I discuss these motions in diagonal, I am considering only a horse in the state of equilibrium. Moreover, when any master speaks, let us say, of the right diagonal effect and the use of the right rein and the left leg, he does not mean that the left rein and the right leg are to cease their effects. What he means is that this rein and that leg are to increase theirs. Otherwise, the horse will turn its body, its spine in the dorsal region will no longer remain straight, and the forward impulse will disappear.

To accustom horse and rider to the diagonal effect, they should execute mounted the lateral and direct flexions, and mobilization by the reversed pirouette and backing. If, however, at the beginning of practice in the diagonal effect, a young rider training a young horse is confused in his efforts, it is better to begin the rotation by the diagonal effects on foot. For this, supposing that the movement is from left to right, the trainer places himself exactly as for the direct flexion, ex-

cept that he holds in his right hand the right reins of both curb and snaffle and also the whip. By means of these two reins he secures a partial flexion to the right; and at the same time, by means of the curb rein held in his left hand, he maintains the head, mouth, and neck inclined to the right. Then, with the whip, he makes the animal execute the mobilization of the hind quarters from left to right, step by step. After some practice at these rotations, both from right to left and left to right, the trainer mounts and repeats the mobilizations by the same effects, but using his leg instead of the whip. But an experienced trainer begins these rotations by diagonal effect, mounted.

For the rotation from left to right, by the right diagonal effect, the cavalier mounted, the horse standing still and in equilibrium, both reins of the bit and the left rein of the snaffle are taken in the left hand, and the right rein of the snaffle is taken in the right hand. The left hand keeps the horse's head perpendicular, the "in hand" position, wnile the right hand, by a light opposition on the right snaffle rein, inclines the horse's head to the right. Meanwhile, the effect of the rider's right leg impels the horse forward, and the left leg, increasing its effect, pushes the haunches toward the right, the animal's right fore leg gaining a little ground to the front. (Figures 21, 22.)

The rotation must be executed calmly and step by step. It is completed when the horse has about-

faced. In the rotation from left to right, the action of the rider's right leg is absolutely necessary for maintaining the forward impulse while the haunches wheel at the effect of the rider's left. The rotation is stopped at its completion by the effect of the rider's right leg; not by the cessation of the effect of his left. The rotation can be done also at the trot, but only upon a circle, and only after the horse has learned to make two pistes, which makes the figure a half-passage. The rotation at the gallop is very complicated, and cannot be performed until the horse can do the two pistes at a gallop.

The pirouette is asked only by the direct flexion of the mouth and neck and can be done at trot and gallop. Backing is asked by the diagonal effect. It is done step by step, and needs great care to avoid wear and tear of the hocks.

The trot is executed by the action of diagonal bipeds, precisely like the walk except that each biped, remains a longer time off the ground. (Figure 23.)

The gallop is the same as the run, but slower. The canter is still slower than the gallop. The run is natural and instinctive to the horse; the gallop is taken and held under the control of the rider; the canter is an artificial gait given by the cavalier.

These three gaits have given rise to so many theories that the result has been and still is an endless confusion. Some theorists teach that run and gallop are executed by the lateral bipeds. All such

Figure 21. ROTATION BY THE DIAGONAL EFFECT: THE RIGHT FORE LEG FLEXED

Figure 22. ROTATION BY THE DIAGONAL EFFECT: THE HORSE ON THREE LEGS, THE RIGHT FORE LEG EXTENDED

Figure 23. THE TROT

Figure 24. FIRST STRIDE IN CHANGE OF LEAD AT THE GALLOP

theories are the product of philosophizing by writers who do more riding with a pen than with hands and legs on a horse's back.

The saddle horse is useful to mankind only by virtue of its locomotion. This locomotion is the consequence of impulsion; and impulsion is given only by the animal's hind legs. To drive the body forward, therefore, it is absolutely necessary that the horse should have one or two feet on the ground. A foot in the air, so long as it remains in the air, can have no effect.

But if, let us say, the right hind foot is on the ground, the right hind leg may deliver its thrust either to the right or to the left fore leg. In the first case, the right lateral biped is set in motion, in the second case, the left diagonal biped.

In order, then, to pass from standing still, or from walk or trot, to the gallop upon the right lateral biped, the rider throws his entire weight upon the right lateral biped, and at the same time, by a quick inclination of the body forward to the right, the rider places the horse in the position to gallop. It then remains only to give the action to the whole machine, the legs of the horse moving in accord with the gait asked.

This action will be given by the effect of the right leg of a rider, who at the same time closes the fingers of the right hand upon the right rein of the curb bit or snaffle. These effects of the right leg and right hand have to be executed by a quick

movement, yet without occasioning too much surprise. But the effects of right leg and right hand will have a tendency to send the haunches to the left rather than forward. Therefore the rider's left leg has also to be closed, partly to prevent the haunches from getting away to the left, and partly because the attack of the right leg first attracts the right hind leg below the center of gravity, and then calls the left hind leg to its support, the front legs being raised by the effects of the right hand, the right ready to extend to receive the weight as the foot comes back on the ground.

All these effects have to be executed with decision and precision, in a word, with equestrian tact. It is this employment of this left leg of the rider to maintain the horse straight at the beginning of the gallop to the right, which has created the mistaken theory that it is the function of the left leg to start the gallop to the right, and of the right leg to start the gallop to the left. Such was the foundation of the theory of the gallop executed by the diagonal biped.

The motion in diagonal at the gallop shows itself only when the horse changes lead from one lateral biped to the other. With the gallop on the right hind leg, this leg, which is giving the impulse, is always in front of the left, which is the more continued support. But for the forcible change of lead from right to left, the impulsion alters first, and after this the support passes to the other leg. The

Figure 25. SECOND STRIDE IN CHANGE OF LEAD FROM RIGHT TO LEFT

Figure 26. THIRD STRIDE IN CHANGE OF LEAD FROM RIGHT TO LEFT

right hind leg, therefore, stops, and the left hind leg moves forward into position for the impulse, while the right hind leg becomes the support. The right front leg also becomes a support; but the left fore leg extends forward to receive the impulsion. It follows, then, that before the left hind leg has made contact with the ground and taken over the duty of impulsion, the horse is upon a diagonal biped. (Figure 24.)

In order, therefore, to execute the change of lead from right to left, the cavalier should, at the instant of change, lean to the right, in order to load the right lateral biped. This, thereupon, becomes the support, and leaves the left lateral biped unloaded and off the ground for the very quick movement called "change of foot in the air." This whole motion, but especially the action of the left hind leg, is so rapid that the eye cannot perceive the relations of the different limbs. Even photography is inadequate to show the action clearly. The camera can, however, be made to exhibit the left hind leg in the different parts of its stride. Thus in Figure 25, the left hind leg first disappears behind the right; and next after that the right fore leg is flexed. Finally, in Figure 26, the left hind leg is on the ground, in front of the right and ready for propulsion. The left fore leg is already raised. It will extend forward as soon as the right hind leg has arrived near the left, to assist as support and thus allow the left hind leg to continue the impulse.

Note, now, the difference between Baucher, Fillis, and myself. Baucher says, "I do not try to explain something inexplicable; it is for the equestrian tact of the esquire to discover how to execute the movement." Fillis says, "I make my horse gallop to the right by the effect of my left rein and my left leg. To change the lead, I employ the opposite effects."

I, on the contrary, sum up my directions thus: By the effect of my right rein, I lift the horse's right fore leg. (Figures 18–22.) By the effect of my left leg, I raise the horse's left hind leg — the diagonal effect. If, then, the horse's left hind leg is off the ground, his right hind leg is pressed forcibly against the ground. (Figure 18.) Thereupon, by the effect of my right snaffle rein, I compel the horse to extend its right fore leg. (Figure 22.) With my right rein and my left leg — diagonal effect — I obtain the right diagonal biped. With my left rein and my right leg — again diagonal effect — I obtain the left diagonal biped for the walk and trot. (Figure 21.) With my right rein, I raise the horse's right fore leg, while with my right leg I raise the horse's right hind leg — lateral effect. This right hind leg will come to the ground under the center of gravity, and drive the body forward. The right fore leg will thereupon extend forward for the gallop to the right — lateral biped. (Figure 25.) My body, being inclined forward, will carry forward the center of gravity, and the gallop will continue until other forces intervene.

And there is all the demonstration of the theorem and the solution of the problem!

Every horse, however, has one side which is more supple than the other; and it is better to begin practice in changing lead by shifting from the less supple to the more supple side.

Suppose, for example, that the more flexible side is the left. My horse being straight, I start it galloping to the right, by the method given above, and keep it going straight. I then reverse all my effects. If the horse changes lead, I stop it as soon as may be, and recompense its obedience. When it is completely calm, I begin again, galloping to the right. After several steps, I again change; and again recompense.

When the horse understands the change of lead from right to left, I proceed in the same way to teach the change from left to right. At first, I ask the change only after the horse has galloped ten or fifteen steps on the same foot. When the horse manages this, I reduce the interval progressively, first to six or eight steps, then to four, and finally to only two. I need not say that this training takes time that cannot be measured by days or lessons. I progress slowly, ask very little, rest my horse a great deal, and keep calm. I do not, under any circumstances, permit my horse to choose the lead for itself, nor to change foot on its own initiative. It is essential that the rider always impose his mastership upon the horse's intelligence. The rules are: short lessons, precision helped by moderation,

recompenses, no overexertion or fatigue. With these, success is assured.

THE FALSE GALLOP

By "false gallop," we mean galloping on one side when turning to the other. A horse is also said to gallop false when it leads with either side, after the rider has signaled for the other.

A horse galloping in a straight line leads with whichever side the rider determines. If this chances to be the left, the rider must change the foot before making a turn to the right. Otherwise the horse will gallop false.

Turning on the wrong foot is always dangerous. In turning, for example, to the right at the gallop, the center of gravity will be displaced toward the right, and the right lateral biped will take the longer step. All this occurs naturally if the horse is galloping to the right. But if it is galloping to the left, the right leg cannot reach out to receive the additional weight, and the horse may cross its legs and fall.

The false gallop is, nevertheless, employed in training the horse to gallop equally on the two sides, and also in teaching it the change of lead on a straight line without change of hand. But it should be understood that in all such cases the false gallop is always asked by the rider, never taken by the horse at its own will. It is essential to a well-trained saddle horse that it gallop equally to either side, and always at the signal of the rider.

CHAPTER XXIII

THE FIGURES OF MANEGE

THE figures of manege include all the different known movements which a horse executes during training or after it is trained. The number is great and the character varied; but they are all compounded from only six elements. These are: forward, backward, turn to the right, turn to the left, half haunches to the right, and half haunches to the left, all done at walk, trot, and gallop.

The masters before Baucher had a wider range of figures than since his day, for the reason that they trained from movement to position, instead of from position to movement, as is now the practice except for the army, hunting, and polo. The progression for the ordinary equitation has, however, remained the same, and consists of the following figures: the double; the changes of direction or changes of hand; the diagonal; the half-volte, reversed half-volte, and volte; the circle, with change upon the circle and change of circle; the figure eight; the half-passage with head to the wall and with croup to the wall; the shoulder in; the contre-change of hand.

These movements, done at walk, trot, and gallop, have long constituted, and still constitute, the complete education of the horse. A park hack is not considered fully trained until it can execute these

movements, which are, indeed, proof of its good manners. They are, moreover, no disadvantage for a promenade horse which is to be ridden by the same esquire who trained it; though the results are most distressing to a rider of less equestrian tact.

THE WALK OF MANEGE

The walk of manege is simply a very slow walk, well cadenced, the steps equal and regular, and with the action of the legs less forward, but very much higher than in the ordinary walk.

It cannot be obtained except under the most perfect equilibrium, while the fingering must be even more precise than for the piaffer and the backward trot, which are derived from it. The rider's legs must maintain the center of gravity always exactly between the forces of the front and rear limbs, not allowing it the least motion from side to side, but only up and down with the step. The seat must be especially accurate, and the contact absolutely permanent. The least alteration of the balance will change the walk to the trot, if forward, or, if backward, will stop the horse.

To obtain the walk of manege, the rider gradually diminishes the speed of the ordinary walk, keeping the state of equilibrium as complete as possible. By the effects of opposition coupled with great accuracy of seat, and by the diagonal effect repeated in *tempo*, he asks slower and slower steps,

the horse's action becoming higher and higher as the stride is shorter and less quick.

It is impossible to advise just when in the course of the training to begin the walk of manege. It is useless to attempt it before the horse has learned to keep in equilibrium. It is well not to try for too slow or too high an action, to study the horse, and at the first sign of success, to yield everything, caress, dismount, and stop the lesson. Two, four, or six steps are sufficient at one time, and should be followed by rest and distraction.

Take special pains to prevent the two possible irregularities, the *acculer*, or getting behind the hand, and the "magpie jump." If either appears, stop the practice of the figure and devote at least fifteen days to sending the horse forward strongly against the bit, equally and at the two hands. This is the only cure for these irregularities or defenses.

Take care not to provoke rearing or the *croupade* by too much precipitancy in your demands. Rearing will probably be caused by fingering in wrong *tempo;* the *croupade* by beginning too early the alternate effect of the legs, so that the signal to lift one biped comes before the other is back on the ground, and there is a brief interval when both are on the ground.

Do not expect to secure a perfect walk of manege until after you have trained two or three horses. Be satisfied at first with a few steps at the gait, and occasional changes of direction. The great point

is to perfect your own equestrian tact. When that is done, all your difficulties are easily surmounted. The walk of manege is the highest proof of the state of equilibrium, and you must learn to feel the horse under you flexing all its joints, developing its power, and cadencing its walk with a great but calm ardor, slow and high. When a horse has attained to the walk of manege, in complete equilibrium, every feat of the scientific equitation becomes possible both to rider and to steed.

TO ENTER THE CORNERS

"To enter the corner" is a manege expression meaning not to let the horse pass the corner of the enclosure close in or far out at its own will.

The manege is commonly rectangular, with two long and two short sides and a surrounding wall. The horse travels straight along the sides, but changes direction at the angles, to the right if being ridden with its right side toward the center — "at right hand" as it is called — to the left if the other way. Naturally, the animal tends to follow the barrier, and will, therefore, instinctively and of its own volition, make the turn before getting quite to the corner, or else will put its head against the wall and stop. In either case, the rider loses an opportunity to practice the management of his mount.

For in a manege of ordinary size, say one hundred and fifty feet by seventy, a horse in the course of an hour's lesson will turn a corner about two

ABCD - quadrangular manege - 4 corners
BC·AD - short sides
AB·CD - long sides
R - piste at the right hand
L - piste at the left hand,
K - corner fully entered - correct
N - corner not properly entered - incorrect

hundred and forty times, half at the right hand, half at the left. If, then, the rider directs the animal at each turn, he obtains valuable practice in guiding his mount, and so learns to perform the act intuitively and without effort. Otherwise, not only does the rider miss the opportunity, but, in addition, the horse, not knowing the difference between being straight and being crooked, gets the habit of crossing its legs, and when asked to go forward and straight, carries its rider to the center of the area.

CHANGE OF DIRECTION

The ancient and the mediæval equitation had it that the turn to the right is to be made by means of the right rein of snaffle or bit and the left leg. Baucher agrees with this. According to him, the right rein flexes the neck to the right. The left leg prevents the haunches from swinging toward the left, while the right leg sends the rear limbs along the arc of a circle of greater or smaller radius. Fillis, though more practical than Baucher, grants that Baucher's opinion has been generally accepted.

But to turn to the right by means of right leg and right rein involves the principle of the lateral equitation, with all its practical errors, a principle which cannot be accepted by the scientific equitation. It is not merely the horse's shoulders which turn; it is the entire horse. The horse is first straight and upon the rider's hand. Then the rider gives the

new direction by the reins, and by his legs impels the animal in it. But, of course, the effect of the right rein is to send the haunches toward the left, so that the horse is no longer straight. Then comes the effect of the left leg to keep it straight by preventing the swing of the haunches to the left. But under the impulse of the left leg alone, the horse executes a pirouette, haunches pushed to the right by the rider's left leg, shoulders pulled to the right by the right rein.

I myself hold to a more rational theory, which differs from the principle of the old lateral equitation, and also from the reasoned equitation of Baucher and Fillis. The horse is either assembled or it is not. If it is not, go as you please. The horse makes the turn, and that is all. If the horse is assembled, the rider controls the center of gravity. This is *sine qua non* for the scientific equitation, which, moreover, admits at the walk and trot no other effects than the diagonal, either to obtain the equilibrium or to execute any movement. The gallop, which is the only lateral gait, requires other effects for changes of direction, of which more shortly.

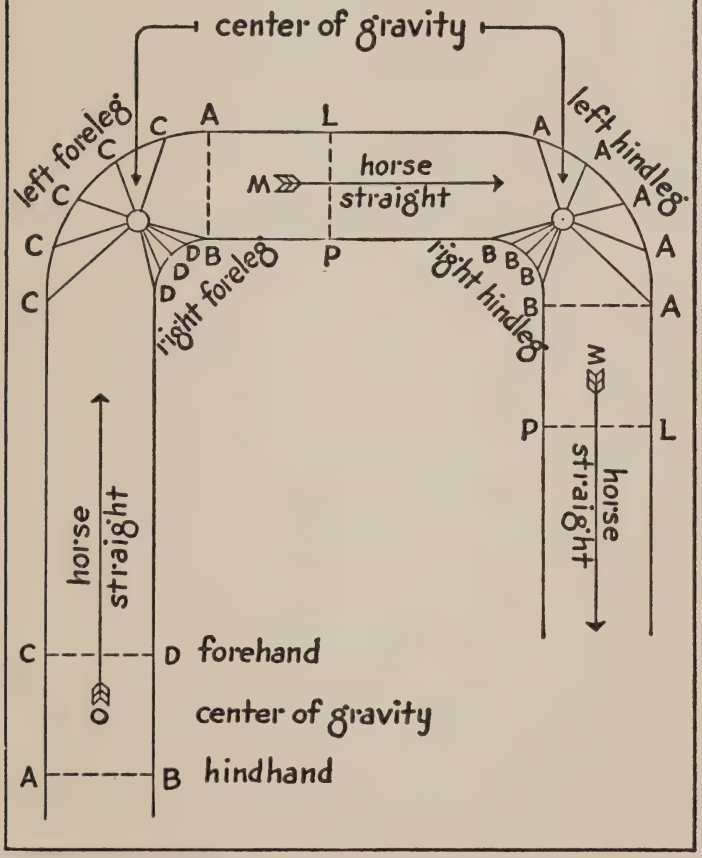
When the horse is traveling straight at the walk, its feet follow the two parallel lines AC and BD, by a diagonal stride in which BC and AD support alternately the center of gravity at O. In order for the horse to turn to the right, the line CD moves to the position PL, it sends following the arcs of con-

centric circles, as the center of gravity travels from O to M; otherwise the equilibrium will be lost. Evidently, the two left legs must travel farther than the two right legs.

But the length of the stride does not affect the velocity or the momentum; consequently, it does not change the center of gravity. The left front leg, if it is to gain more ground than the right, must be unloaded, since the rule is that any leg cannot leave the ground before the weight which it carries has been transferred to another support. This we accomplish by flexing the head slightly to the left, and at the same time we establish the fixed point of the *rhomboidus* and *mastoido-humeralis* muscles at the left side of the atlas region. Thereupon the unloaded left shoulder will cover the longer distance CL while the loaded right shoulder is covering the shorter distance DP and serving as pivot and support for the center of gravity, which remains on OM.

But for the impulsion of the hind quarters, both the rider's legs are necessary. The left prevents the haunches from yielding to the effect of the right, and thus departing from the proper path ACL. The right leg of the rider pushes forward the right hind leg of the horse, and since this is prevented from moving toward the left off the line BDP, the center of gravity must remain on the line OM; and momentum, velocity, and equilibrium remain altered.

Change of Direction



The same movement at the trot is executed in accord with the same principles and by the same means. The rider, however, needs to make a somewhat more forcible effect to obtain the same result — a fact which goes to confirm this theory of change of direction in diagonal.

The idea of using the left rein for a turn to the right is bound to give rise to much discussion. But the reader is already familiar with the rein of contraction, or guiding by the neck, where the rider employs his right leg, and at the same time, by carrying his hand to the right, draws on the left rein. This new principle, created by myself, I have considered and practiced long years. The results convince me of its truth.

The horse mounted by a rider carries a very considerable weight, a fact which both Baucher and Fillis have completely neglected. Baucher, to be sure, has recognized the seat as a third means of control. But what is the seat, if the weight supported by it is ignored? These two masters advocate, with reason, collection, the assemblage of all the forces of the animal at a center, and the resulting state of equilibrium. The horse is placed in this state by the effects of hand and legs, and maintained there by the same means. They point out, rightly, that the horse in equilibrium is comparable to a large ball, in contact with the ground at a single point, so that the least weight added to one side starts the movement in that direction. When,

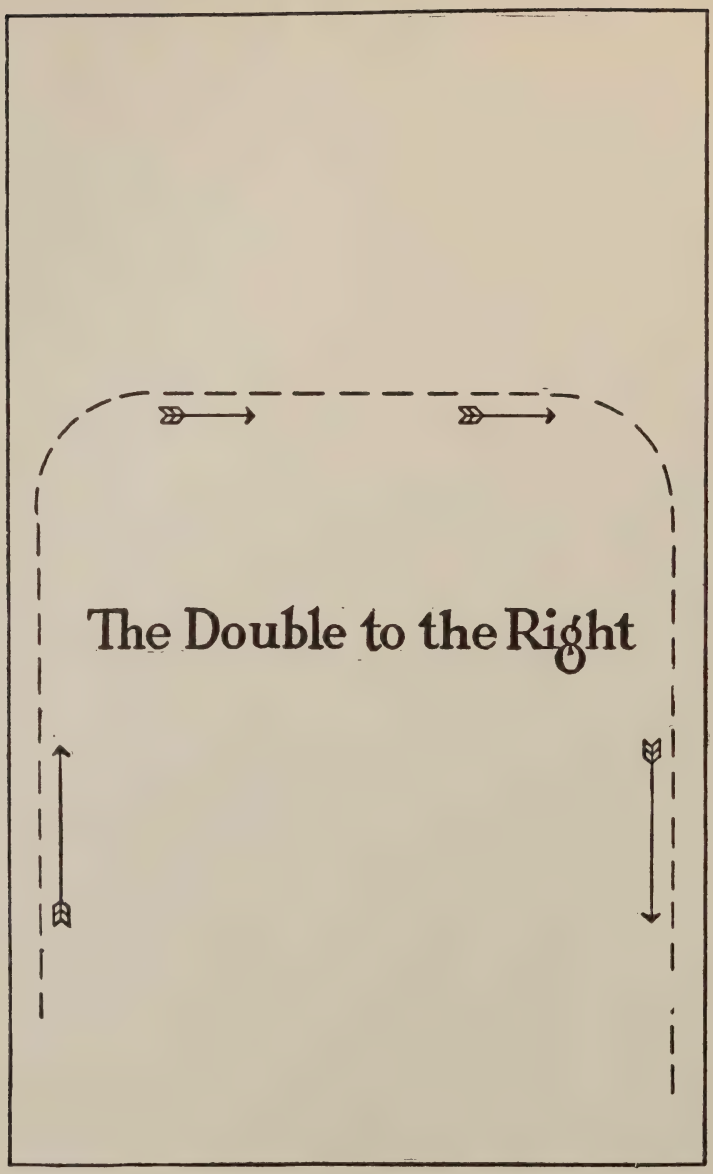
therefore, a horse is in equilibrium, the shifting of the rider's weight from his left haunch to his right will turn the horse and send him forward to the right. Are we, then, outside the natural laws of motion? No. We are obeying the law which teaches that a body in motion will continue to move along the same straight line until another force interferes. This other force is the rider's weight, which, when applied at one side of the center of gravity, displaces this and forces the horse to turn in that direction.

All this is undeniable. It is easy, therefore, to understand the fights of these two masters with the horses educated by them. The horses walked and trotted in diagonal. The riders employed the lateral effects. The horses galloped in lateral. The riders, to train them to that gait, used a half-diagonal effect. Naturally, the horses became confused between their instinctive gaits and the riders' effects which were flatly contrary to them.

However, if a horse is not in a state of equilibrium, this change of weight will have no effect, and the scientific equitation is not concerned with the matter.

THE DOUBLE

THE double is a figure of manege in which the rider crosses the quadrangle from side to side and returns to the original piste at the same hand. It involves, therefore, merely two changes of direction to one side or the other.


The Double to the Right

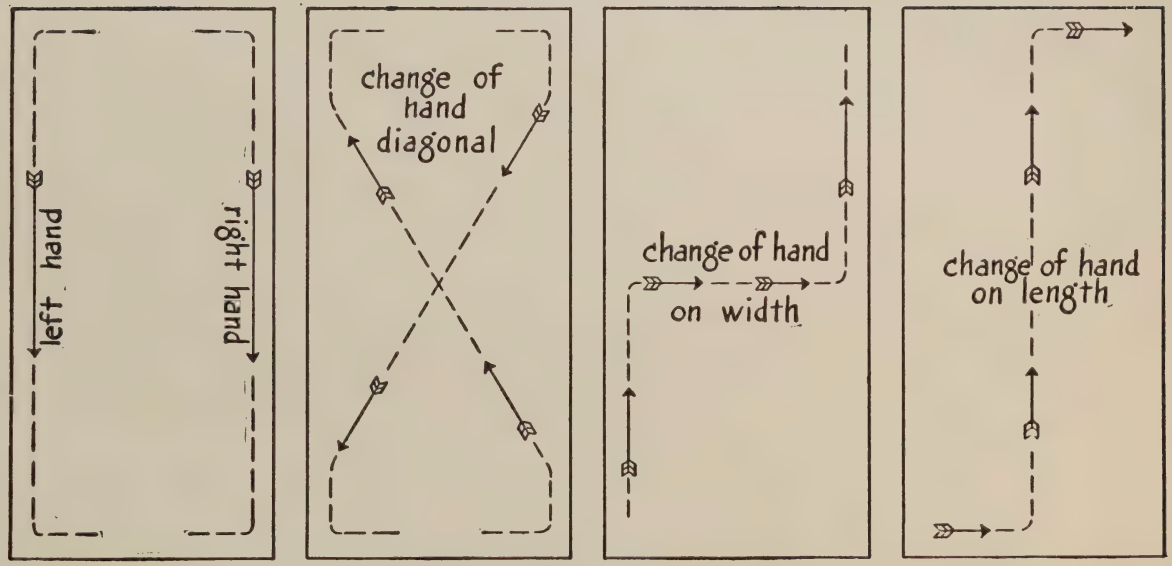
The movement is simple, and easy of execution for the experienced rider with a horse that is sufficiently advanced with its education. The essential point is to manage correctly the first change of direction, and then to guide the horse exactly straight across to the other side of the manege for the second change which completes the double. At first view, it looks very easy to do this; but in practice it is not so simple, and the maneuver is asked of the horse precisely in order to accustom it to change and return straight. The rider also will find the double educative if he does it correctly. The point is to cure any hesitation on the part of the horse in turning to either side, and to get it to place itself exactly straight from head to croup as soon as it has turned. The rider who can do the double correctly at walk, trot, and gallop is on the road toward the perfect education of his horse.

CHANGE OF HAND

CHANGE of hand is very useful in training horses to be equal in their gaits, and also for teaching riders to execute figures on either side when instruction is given in classes.

Both the old and the newer schools of equitation prescribe that in riding at the right hand — that is to say, with right side toward the center of the ring — both reins of the bit, together with the left rein of the snaffle, are to be held in the left hand, while the right rein of the snaffle alone is to be held in the

Changes of Hand



right hand, since all turns are to be made to the right. This arrangement follows from the confused ideas of the lateral equitation and from the principles developed by Baucher for changes of direction.

The scientific equitation, on the other hand, prescribes that, in riding at the right hand, the two reins of the bit and the right rein of the snaffle shall be in the right hand and the left snaffle rein in the left, for all movements in diagonal, that is to say, at walk and trot. But for movements at the gallop, the curb reins are to be transferred to the left hand and only the snaffle rein held in the right, because the gallop is a lateral gait.

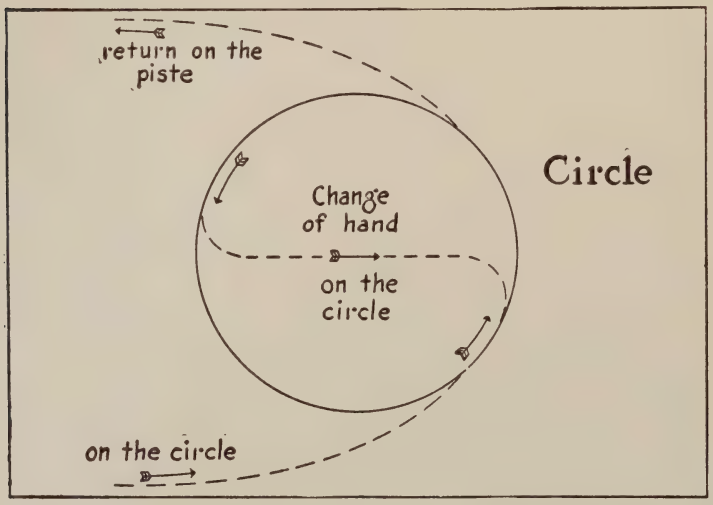
When riding at the right hand, the horseman may change hand by means of a great variety of movements — changes in width, in length, in diagonal, the half-volte, or the reversed half-volte, all of which will be discussed shortly. All changes of hand are, however, really nothing but changes of direction. But since in reversing the side which is toward the center of the ring, there has to be also a reversing of the position of the reins in the hands, changes of direction have come to be called changes of hand.

THE CIRCLE

THE circle is a figure of manege executed near the center of the ring by a single horseman, or by several horsemen following one another. This figure may also be executed on a road, a piste, or a field.

The ancient equitation and that of the Middle

Ages used the circle to train the horse to bend its spine in the direction of the turn, by yielding to the lateral effects of hand and legs, but without alteration of gait. It was employed especially to teach the



animal to take the gallop, since a horse walking or trotting on a circle to the right is already placed. Its neck is already somewhat turned by the snaffle, and to change to the gallop it needs only the impulse of the rider's legs to augment the action of the right hind limb. The circle, therefore, taken alternately at the two hands and by means of the lateral effects, will soon teach the horse to gallop to either side.

This movement, very easy in the lateral equitation, is much more complicated in the reasoned

equitation at the trot and walk. In this case, the center of gravity has to be maintained by the rider's seat, while at the same time, in circling to the right, the horse's neck has to be inclined slightly to the left, in order to unload the left front leg, so that this may gain more ground than its mate, which acts more or less as a pivot. Meanwhile, the rider's right leg is impelling the horse's right hind leg around the circular path, and his left leg is preventing the haunches from getting away toward the left at the effect of his right.

At the gallop, circling to the right, the position and the effects of the rider's legs are the same, except that now the horse's nose is carried a little to the right, by the action of the snaffle, in order to unload the right fore leg, which now has to be lifted higher than the left and to gain more ground. The center of gravity is now more on the right side, but always in the middle, though slightly back under the rider's right haunch.

Doubles upon the circle are executed by crossing on a diameter and continuing once more along the circumference at the same hand. If, however, the rider, after passing the center, turns in the other direction on the circumference, he is said to execute a change of hand on the circle. Evidently, the circle is merely a continuation of the two voltes, in which the horse is maintained upon the circular line.

The important point in this work on the circle is

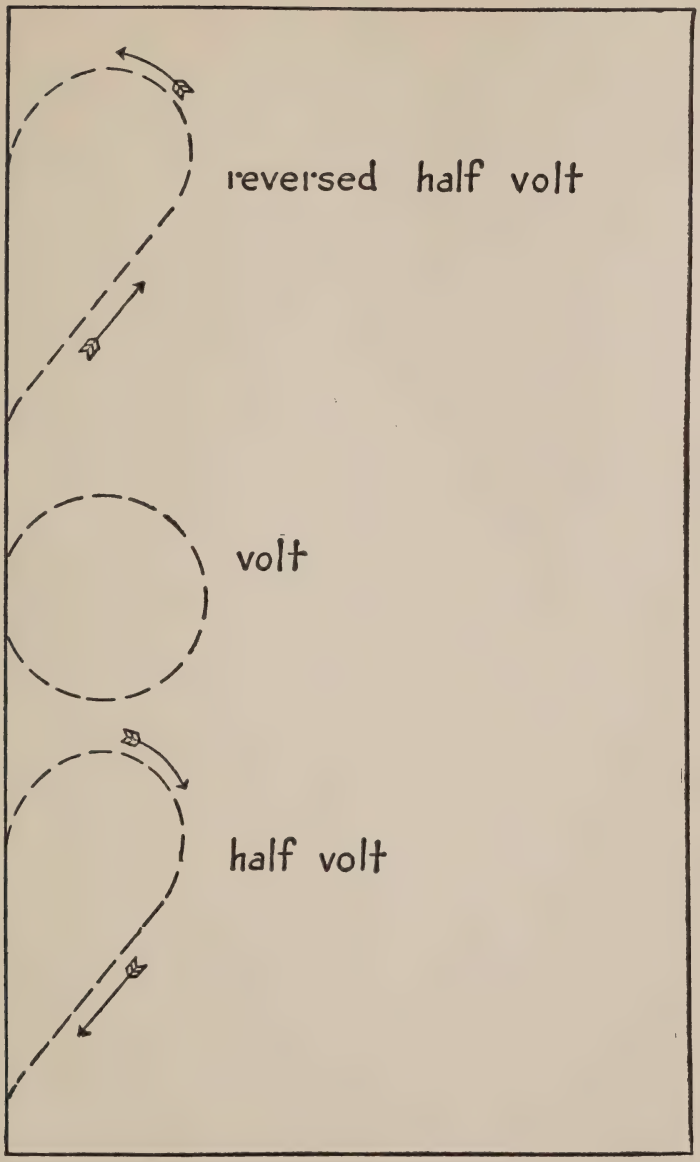
to keep the horse, whether walking, trotting, or galloping, always with all four feet in the circular path, never letting the hind quarters stray inside or outside the fixed line. Evidently, in circling at the right hand, the partial flexion of the head to the right will tend to throw the haunches outside the true path, so that it requires a very accurate effect of the rider's outside leg to correct this fault to just the right degree. Moreover, the circle itself, throughout the movement, should remain of precisely the same size, in spite of the tendency to become smaller or larger.

THE VOLTE

THE volte is a circular movement, executed in the manege or outside, in which the horse changes direction in three steps of one yard each, and in twelve steps completes the circle.

Before the days of the scientific equitation, the volte was asked at all three gaits by the lateral effects. The new equitation asks the volte at walk and trot by means of the diagonal effects, and only at the gallop by means of the lateral. In this, I am completely opposed to the principles of my predecessors, Baucher, Fillis, Anderson, and their contemporaries.

Consider, therefore, just what is involved in the execution of a volte, let us say to the right. The horse, in order to send its inert weight to the right while keeping the center of gravity at the middle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point of the medial plane, must dispose its legs in the following manner: The right front leg is the chief point of support, since it is nearer the center; but the left leg, since it is farther away from the center, travels the longer path. The right hind leg has to do more work than the left, since in addition to supporting its share of the weight, it does more than its share in driving the body forward.

It follows from this that at walk and trot the proper effects for the volte are a very limited flexion of the head to the left, pressure of the rider's right leg close behind the girth, and pressure of the left leg farther back, to keep the horse's left hind leg on the circular line. At the gallop, on the contrary, the flexion of the head is to the right, to unload the right front leg and allow it to gain more ground than the left. The effects of the legs are, however, exactly the same as for the diagonal gaits. The rider's right leg maintains the gallop to the right by its stronger effect on the horse's right hind leg, while his left leg holds the rear limbs in the circle.

Now, the walk and trot are movements made in diagonal. Why, then, ask a creature, which naturally and by instinct moves in diagonal, to turn by lateral effects? Fillis himself had doubts concerning the propriety of this method of changing direction; for after considering the question he adds, "The opinion of Baucher has prevailed and the lateral effect has been accepted." But in the lateral effect, the right rein flexes the horse's neck to the

right, and therefore loads the left front leg, although this has to gain more ground than the unloaded right. Meanwhile, the rider's left leg pushes the haunches to the right and upon the right hind leg, directing these to the right instead of to the left in order to turn the horse to the right. It is even the more surprising that these same masters execute the volte at the gallop by the very same means as at the walk and trot, notwithstanding the fact that these gaits involve an entirely different disposition of the mechanism.

My own honest opinion is that these masters were asking, by lateral effects, movements which the horse executed by diagonal gaits, and so confused their mounts thereby that, when they attempted such diagonal movements as the piaffer, passage, Spanish walk, and Spanish trot, the animals resisted. The result was quarrels and fights between man and horse. I, on the other hand, never have fights. When my horse walks or trots, in diagonal, all movements are asked by diagonal effects. But when the horse gallops, in lateral, all movements are asked by lateral effects. My mount has always all its natural forces in their instinctive relation.

THE HALF-VOLTE

In executing the half-volte, the horse makes two successive changes of direction, so that he faces the opposite way from his original position. Suppose,

for example, the horse is traveling along a piste, at right hand, and near the wall. A change of direction at the corner of the manege, followed immediately by another, places the animal about three steps away from the wall and facing toward what was the rear. Thereupon, moving on a diagonal line, the horse returns to the piste.

The half-volte is, then, simple enough as a movement of the ordinary equitation. It becomes decidely complicated when performed as a figure of the reasoned equitation. The rider, as above, employs the left diagonal effect to reverse the direction of the horse's movement; and then immediately changes to the right diagonal effect to return to the piste by means of a half-passage of twelve steps at the most. The formula is, therefore, for walk and trot: left rein; right leg near the girth, to maintain the hind hand for the about-face; then, when the two changes of direction are complete, right rein, left leg behind the girth, right leg near the girth, to maintain the regularity of the forward action during the half-passage.

At the gallop, the means are still more complicated. The horse is at the right hand and leading to the right. The procedure is, therefore: right rein, right leg near the girth, left leg behind the girth to maintain the haunches during the turn; then, for the half-passage, left leg behind the girth to push the horse to the right. As the horse comes once more to the piste, the action becomes: left rein and

left leg to control the left lateral biped, right leg to maintain the haunches straight and to change the lead from right to left, since we are now riding at left hand.

One should practice the half-volte several times in the simpler form before trying to add the half-passage, and should not attempt the latter movement until the figure is perfectly clear in the mind. But the ordinary half-volte is nothing more than the ordinary pirouette, taken at walk, trot, or gallop, and continued by the twelve steps of the half-passage with a change of lead.

THE REVERSED HALF-VOLTE

In the reversed half-volte, the horse travels over the same path as in the direct figure, but in the opposite direction. Thus, for the reversed half-volte, done at the right hand, a half-passage to the right of twelve steps takes the animal away from the wall of the manege. Then two changes of direction or a half-circle to the left complete the return to the wall with an about-face and a change of hand.

The means are, therefore, for the half-passage at walk or trot, the right diagonal effect — right rein, right leg near the girth, and the haunches pushed over to the right by the left leg behind the girth — with continuance of the same effect to produce the two changes of direction, until the horse is once more straight, but at the opposite hand.

At the gallop, the horse makes the half-passage leading to the right; the lead then changes to the left for the two changes of direction. Consequently, after the completion of the half-passage, the left rein and the left leg alter the lead, while the right leg prevents the haunches from going too far to the right and maintains the gallop by keeping the horse inclined upon the circular line.

If the horse's education has been wisely progressive, especially if the progress has not been too rapid, the two half-voltes are easily performed simply by the master's equestrian tact. But if the training has been irregular, then they become complicated and difficult. In this case, it is better to have the horse move in a straight line in place of the half-passage, changing the lead when necessary. Done in this way, the figure belongs to the ordinary or lateral equitation. Properly, however, it is twelve steps of the half-passage, completed by a reversed pirouette at walk, trot, or gallop.

THE FIGURE EIGHT

THE figure eight involves two circles, one to the right, the other to the left, done at the center of the manege or anywhere away from walls.

The older methodists, both of the Middle Ages and of modern times, prescribed the lateral effects of hand and legs in order to hold the horse's entire body, from front limbs to rear, flexed upon the circle on which it travels. It is necessary for this

Figure 8

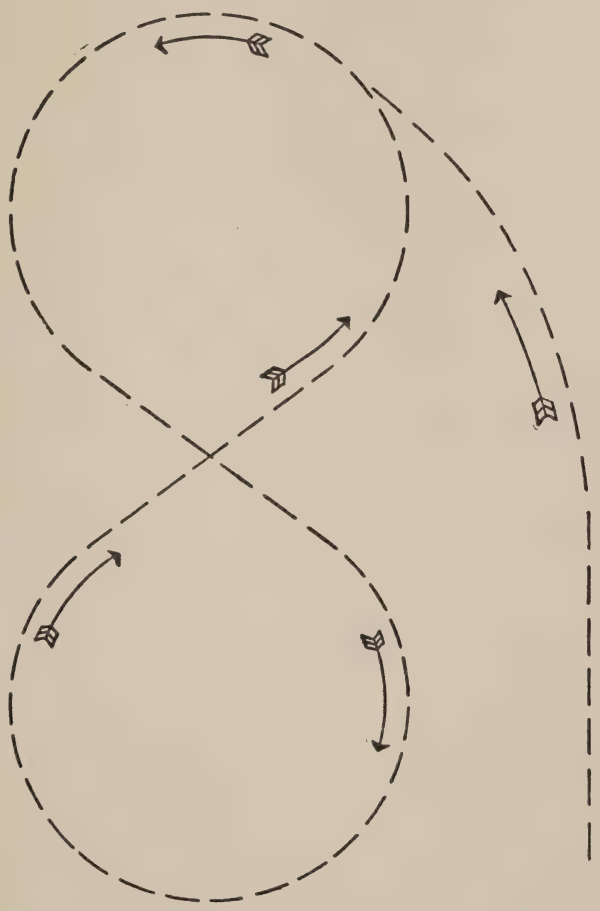


figure that the horse's education shall be somewhat advanced, in order that the curve of the spine may conform to that of the path. When, in addition to this, the flexion has to reverse with each new circle, the difficulty is much increased, so that the figure demands great suppleness in, and perfect collection on the part of, the horse, and for the rider an equestrian tact sufficient to enable him to reverse his effects at each change of circle without disturbing the equilibrium of his mount.

The figure eight has been a great deal used for suppling the horse, and is still employed for this purpose by modern teachers and in military schools. The scientific equitation, however, comes to it only after the horse is completely suppled. Inexperienced trainers often utilize the figure to teach a horse to change lead; and this method is harmless and practical. Judges at horse shows have the competitors execute the figure eight in order to discover the degree of suppleness and training of the horses. It serves also as a test for the side and the limb affected by lameness.

SHOULDER-IN

SHOULDER-IN is an old air of manege, in which the horse moves sidewise. It differs from the half-passage in that it is performed in lateral, whereas the half-passage is in diagonal. The name is a misnomer. Possibly it arose from the fact that in executing the figure the horse is usually headed to-

ward the center of the manege with croup toward the wall.

To obtain the shoulder-in, from left to right, the rider, having his mount in hand and forward, increases the pull of the left rein to flex the head and neck slightly to the left. At the same time, he increases also the effect of his left leg, carrying it a little backward on the flank, and thus pushes the haunches toward the right. Meanwhile, the right rein prevents the complete flexion of the neck to the left, and forces the left shoulder toward the right in front of the right leg.

The result is that the horse's left front leg passes in front of and across the right, while at the same time the left hind leg also passes in front of and across its mate. Thereupon, the horse, in order not to fall, steps out to the right with both right legs, and the first step of the shoulder-in is completed. Continuing the same effects continues the movement.

But the student, who considers anatomically the mechanism of the horse and its action in the various movements, will agree with the anatomist that the muscles and articulations of the horse's shoulder are not designed to allow natural movements of the humerus and scapula in any direction except forward and back. The horse, in short, is not a crab, built to go sidewise. The shoulder-in and the half-passage are therefore unnatural contortions compelled by riders who know no better.

HALF-PASSAGE

THIS air can be asked of the horse only after it has learned to cede from the neck at the effects of the reins and from the haunches at the effect of the legs. To obtain the movement, the horse, walking at left hand, is first stopped, and then made to execute a reversed pirouette, by means of the rider's right leg and a quarter flexion of the head to the left by means of the left rein. Thus, the horse's head stays against the wall, while the haunches make a half-circle to the left. This first movement is complete when the horse has faced about and is at the right hand. Immediately thereupon the rider caresses the horse's right flank. The position of collection is again asked, and the horse carried forward at right hand. After a few steps, the animal is again halted and put through the reversed pirouette from left to right.

In all this, the rider has to remember that the employment of one of his legs does not mean the complete cessation of the effect of the other, and he has also always to bear in mind the principle, *sine qua non*, forward, forward, always. Consequently, when the reversed pirouette is asked from right to left, the rider's right leg first sends the horse forward.

As soon as the horse understands the reversed pirouette after being stopped, the rider has it execute the same movement without the stop. When

this is mastered, the rider, still keeping the animal moving forward by the effect of his inside leg, by repeated effects of the left leg, causes the horse to execute two or three steps of the reversed pirouette while still gaining ground forward, the head against the wall and the haunches toward the center of the

HALF-PASSAGE, HEAD TO WALL

manege. After a few steps of this, the horse is again sent forward; and after a few more steps, the half-passage is again asked. When the horse executes this movement calmly and with ease, the rider first asks the half-passage, and then completes the movement by half a reversed pirouette, to complete the change of hand without stopping. The horse being now at the new hand, the half-passage is again

asked, and as before completed by a reversed pirouette after a few steps at the new hand.

When the horse does the half-passage correctly with its head against the wall, it is removed from the barrier by a change of hand in diagonal. During the entire time of this diagonal change, the horse will be kept straight. But when it comes to within five to seven steps of the wall at the new hand, the rider will begin the half-passage, so as to reach the wall at least ten steps from the corner.

For example, the rider, at right hand, makes the diagonal change of hand by going straight through the center of the ring, and, having passed this, keeps straight on until the horse is five, six, or seven steps from the wall. Here, he asks the half-passage from left to right — right leg for forward, right rein and augmentation of the effect of the left leg for the half-passage. When, by this movement, the horse is brought parallel to the wall, the rider stops the horse, caresses its left flank, and keeps it standing still for some moments to allow the movement to fix itself in its memory. It is then carried forward to pass the corner.

The rider, now at the left hand, once more asks the diagonal change of hand and the half-passage with everything now reversed. When the five to seven steps of the half-passage are done correctly, their number is progressively but moderately increased, until finally the entire diagonal change of hand is made by means of the half-passage.

When the animal is able to cross the ring at the half-passage correctly, it is taught the original movement with its croup, instead of its head, against the wall. For this, the rider, after passing the corner of the manege and starting down the long side, begins an ordinary diagonal change with the horse straight.

HALF-PASSAGE, SHOULDER-IN

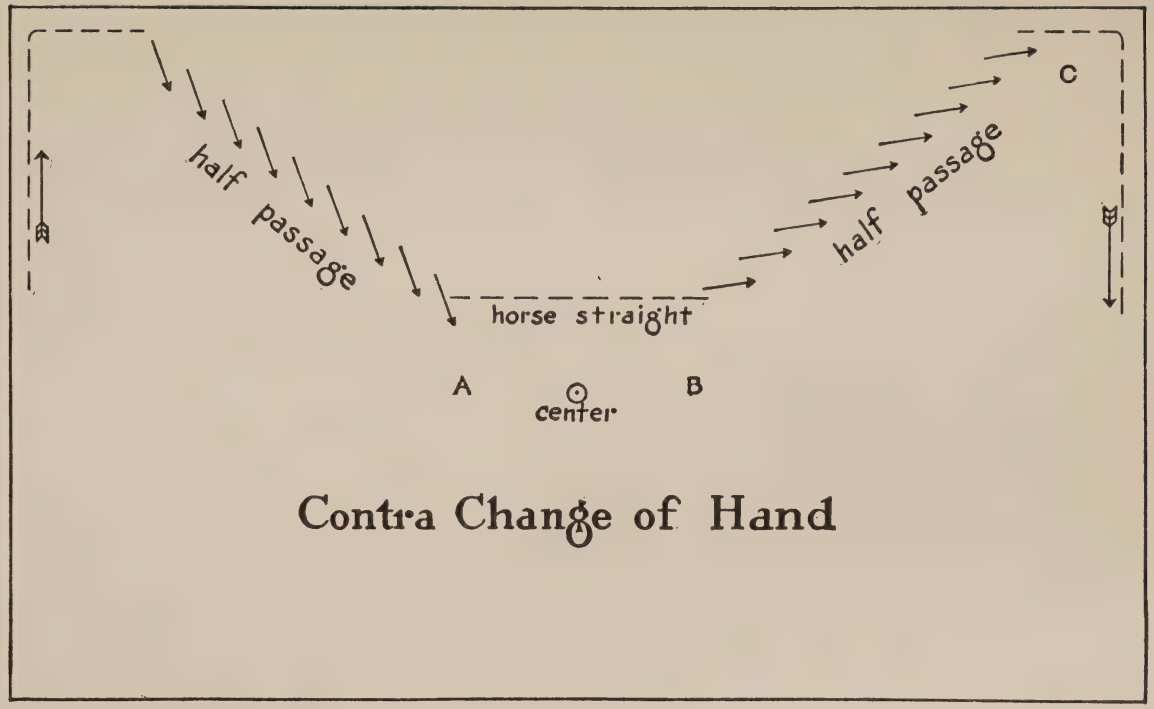
But as soon as the horse has completed, at most, four steps of this movement, it is made to execute a half-passage, with head toward the center of the ring and tail toward the wall. After a few steps of the half-passage, the horse is again sent forward, parallel to the wall but four steps out, and then is brought back to the wall, at the same hand as at the beginning, by a few steps of another half-passage. With moderate progress at each lesson, the horse is, after a few days, brought to travel the

entire length of the side of the manege at the half-passage.

By the same progression as for the half-passage at the walk, the horse is next trained to the half-passage at the trot.

When this is well executed, then comes the shoulder-in at the gallop. Galloping to the right hand, head against the wall, does not need a change of lead. But for the change of hand diagonally, the horse must change the lead when the change of hand is completed and before passing the corner. So too, for the shoulder-in with the horse's head toward the center of the enclosure and the croup toward the wall, the horse has to be galloping at the opposite hand.

If, for example, the rider is at right hand and wishes to execute the shoulder-in from right to left, at the same hand, over a line parallel to the long side of the manege, and with the horse's head toward the center and the croup to the wall, it is evident that the first part of the movement which puts the head inward must be done with a right lead. Then for the shoulder-in, the lead must change from right to left. But when the horse once more travels straight along the wall, it is, as before, at the right hand and must lead once more to the right. At first, however, it is better to decompose the movement, changing from the gallop to the trot, at the end of each portion, and then returning once more to the gallop with the proper lead. When,



Contra Change of Hand

however, the horse makes the change of lead in the course of the movement, these changes are made without pause or change of gait.

CONTRE-CHANGE OF HANDS

CONTRE-CHANGE of hand is a figure of manege resembling the square. After the horse has passed the short side of the ring and has taken about ten steps on the long side, the rider begins a diagonal change of direction by the half-passage. Arrived at the point, A, ten steps from the center, O, of the manege, the horse is put straight again for twenty steps to B; and after that returns to the long side by a half-passage at C, at the same hand as before the execution of the figure.

At the walk the figure is quite complicated if the *tempo* of the gait is regular; but the trot is more complicated, because of the difficulty in obtaining the *tempo* and the regular number of steps.

At the gallop, the difficulties are multiplied by the three changes of lead. The rider being at the right hand before the movement, executes the half-passage leading to the right to A or B, at which point the lead has to be changed from right to left to execute the half-passage from B to C. Arrived at C, the lead is to the left and has to be changed to the right at C. Finally, the horse, now returned to the right-hand lead, has to turn the corner at this new hand, which is the same as that before the execution of the figure.

CHAPTER XXIV

MY OWN SYSTEM

THE various figures of manege, together with the low airs of the high school, constitute the circus equitation. This differs from the *équitation savante* in that while the one keeps the horse always in the state of equilibrium, the other neglects this, and depends for the horse's training upon straps, tricks, and the memory of caresses or severe punishments. Nevertheless, Franconi, Baucher, and Fillis have shown in the beautiful circuses of European capitals some horses which, always in the state of equilibrium, executed these low airs so brilliantly that they have never been equaled.

Baucher offered his system to the different cavalries of Europe, but without success. Fillis, though not accepted in France, became instructor to the officers of the royal *chevaux-legérs* in Belgium, and also taught for several years at the cavalry school in Russia. Both these grand masters were continually studying the application of their principles; and because of their great reputations, they were able to obtain, for education or purchase, some animals of a quality, both of temper and of conformation, very near perfection, and in every way greatly superior to the general run of horses.

I, on the other hand, like other artists, always

poor, have always been criticized for the inferior natural quality and conformation of the horses which I have trained. I have, therefore, amidst all the confusion of theories, methods, and principles, devoted my life to training imperfect animals. In so doing, I have had opportunity to discover what is right and what wrong in the methods of my predecessors. They selected perfect animals and taught them the low airs in the state of equilibrium. I have taken imperfect animals, and by means of the low airs, using these as gymnastics, have corrected their imperfections, and brought them to a conformation that makes the state of equilibrium possible.

I have been so invariably successful in correcting and educating the horses which I have owned, or which have been sent to me for training, that as early as in March, 1888, a commission of the United States Army was sent to my school to examine into my system. A portion of their report appears in the Appendix.

The *modus operandi* of my method, and the progression of movements of the low airs which I employ as a system of physical culture for the horse, are best explained by specific examples. In general, the scientific equitation can locate the cause of lameness or unsoundness more precisely than can a veterinarian, since the latter has neither the equestrian tact nor the accuracy of seat to detect the member which is not acting as it should.

For instance, a horse has some disease, no matter what, affecting the left fore foot. A veterinary treats the trouble, but the horse, during the treatment, shrinks from putting its weight on the lame foot. The muscles, tendons, and ligaments of the left fore leg, therefore, doing less than their full duty, become more or less atrophied, while the right fore leg, doing more than its share, becomes correspondingly developed. When, at length, the diseased foot is cured and once more sound, no trouble appears so long as the horse stands still. But as soon as it begins to move, the weaker left leg fails to stride symmetrically with the stronger right. The trouble is, however, no longer in the foot, but in the muscles, ligaments, or tendons of the leg. The remedy is, then, gymnastic, to bring the weak organ to the level of the rest of the body. This belongs to the master of the scientific equitation. It is exactly like the case of a man kept in bed with a broken limb, whose physician gives him at first massage, and then, after the bone is knit, turns him over to an instructor in gymnastics, who, by flexions and exercises, restores the energy and elasticity which the patient lost during his enforced rest.

I have, I have said, always been criticized for not buying good and sound animals for myself, as other masters do. But to educate such an animal teaches the rider nothing. It is too easy. The master does not prove his own ability nor the practical

usefulness of his art by training horses already made nearly perfect by nature. The test of his science and his utility lies in his ability to correct the natural defects of an ordinary animal and make it useful.

But how can a teacher of this art direct his pupils, if he does not himself understand the importance, direct or indirect, of what he teaches? "An ounce of prevention," says the proverb, "is worth a pound of cure." Riding-masters, teach your learners correct seat and correct effects, in order that they may not themselves lame their horses!

To take now an example of a very different sort, I have seen, in the course of a lifetime passed in studying horses, some that were near perfection after their education was finished, but not before. One and all, before they were trained, they had some defect of conformation or of temper. Furthermore, I have particularly noticed that physical defect has a great influence on the temper. For if a horse has the conformation and the strength to accomplish what the rider asks, it makes no difference what the service may be, the horse will try its best if only it is treated with humanity and intelligence. But if a horse is weak, or badly conformed, or too young for the task put upon it, notwithstanding all its good-will it cannot obey for lack of physical power. It tries, fails, and refuses. If then, the rider, neither humane nor intelligent, treats the horse brutally or unjustly, the animal's retentive

memory stamps the lesson on its temper. It becomes restive, vicious, dangerous.

My long observation and study convince me, moreover, that not only does the physical strength of the horse affect its temper; the very temper itself is created by the treatment which the animal receives. This treatment, more or less practical, more or less reasoned, is the horse's education. The memory of wrong treatment is what fixes the instinctive reactions which we term defense, restiveness, and vice. Is it not, after all, precisely on this basis that we direct the child's development to manhood?

Or to take yet another example illustrative of my principles, every horse, like every man, though on the whole well conformed, is virtually never exactly the same on the two sides of the body. We ourselves are either right- or left-handed, and usually right- or left-legged. We seldom have quite the same power or freedom in one set of members as in the other.

This asymmetry of the two halves of the body is, in the horse, known as "side." All methodists, from Xenophon to the present day, have recognized the defect. I shall not dwell on the various causes which various writers have assigned for the trouble. It is sufficient to point out that it exists, undeniably; and that it appears at birth. The young creature, therefore, its "side" being uncorrected, forms the habit of moving unsymmetrically. Certain of its members, thereupon, being slightly less energet-

ically employed than their mates, develop less strength. In the end, slight atrophies result which derange the precise equality of the strides, steps, and gaits. The horse does not go sound, and is condemned as lame. Naturally, such "side" is a more serious matter for a horse than for a man, since the horse gets its utility from its locomotion and the movement of its four members.

This inequality, this atrophy, is not easily located by the non-professional, often not even by the veterinarian. The inequality or the lameness is apparent. But which leg is at fault, or where in the stride the derangement occurs, is, in the opinion of competent veterinarians, a very complicated problem. The cause may be in a hind leg, while the effect appears in a perfectly sound front one.

Recognizing the importance of this matter, and interested also because of my ownership of a great variety of horses in my different schools, I have studied the problem deeply, and as the result of wide experience aided by experiments, I have developed a system which was adopted by General P. H. Sheridan, after a favorable report from a board of army officers.

This system involves locating the derangement, discovering its causes, and then repairing the defect by means of the low airs of the high school. A complete account is beyond the scope of the present work, but I shall be glad to supply complete information to the interested reader. I touch upon

the matter here to emphasize the difference between myself, on the one hand, and Baucher and Fillis, on the other. They employ these airs of manege for the sake of public exhibition. I use them as a means of correction or development. I want a horse, sound, strong, and well developed, in order to have a square and equal walk, trot, or gallop. Since it is impossible to find a horse having these qualities by nature, I attain my object by means of gymnastic exercises derived from the movements of the high school.

I have, then, invented no new air of high school, though I have complicated some old ones, but always for the sake of more strength, more precision, more energy. I begin my course of training always by the work with the longe, the horse turning the circle successively at the two hands. It is during this first part of the horse's education that I make my diagnosis of the case, and my prognosis. That done, I attack immediately the local cause of any derangement.

For example, the horse, walking round the circle, proves weak in loins, coupling, hind quarters. I load it progressively with a proper weight, and watch its progress. When it carries the weight energetically with its hind quarters, I make it walk backward, a few steps at a time, several times at each lesson. When its progress becomes still more evident, I mount and continue the education by flexions, pirouettes, reversed pirouettes, and back-

ing, until finally I come to the assemblage. When this state is attained, I use the piaffer from the beginning, progressively. When a saddle horse can execute the piaffer, the hind hand has all the strength needed to carry weight over wall, hurdle, or ditch.

Another example. My horse shows that it is weak in its left stride. I immediately begin the Spanish walk, demanding more movement of the left front leg than of the right. Then I exact progressively the Spanish trot, provided that the trouble is localized in the left shoulder, a point easy to verify by the lack of contact upon the left rein. How? Well, if the contact upon the left bar gives the fixed point at the atlas region, this fixed point is the center from which originates the action of the two muscles, *rhomboideus* and *mastoido-humeralis*, which by their contraction raise the left front leg and extend it forward. But, of course, if the shoulder is weak, the horse is not willing to move this left shoulder or leg, and so refuses the contact, in order not to establish the fixed point from which the action starts. But if the difficulty is not in the shoulder, but in the arm from the humerus to the knee, by a little more steady flexion with my rein, I flex the arm upon the humerus. The head, being now more flexed, gives the fixed point to the *rhomboideus*, but prevents the action of the *mastoido-humeralis*. The leg, therefore, raises, with the arm extended and the knee flexed.

Or, again, suppose the derangement is located in the right trapezius, which gives to the raised front leg the time of the three movements of the forward stride. I keep a more persistent flexion to the right, in order that the muscles of the neck, by their arrangement and their connections with the trapezius, may force the trapezius to remain contracted for a longer time. So as the right fore leg lifts, flexes, and extends, the trapezius keeps it extended. Thus, the trapezius is especially exercised, and in the course of time becomes developed to the degree needed to give as long a stride on that side as on the other.

Still another case. The stride of the left front leg is longer forward than that of the right, and consequently gains more ground than its mate. Naturally, then, the right hind foot, having less open space in front of it, cannot reach out so far as the foot on the other side. The strides are, therefore, unequal; and the horse is judged to be lame in the right hind leg. Yet it is not. The short stride of the right hind leg is only the effect. The cause of the trouble lies either in the fore leg, or in the shoulder, or in the muscles which operate the right fore leg. But the horse, being lame, balances itself with head and neck, so that it is impossible to locate the trouble. Paralyze this balance, and the horse, if not unequally conformed, will stride squarely. It merely had a bad habit.

In a word, find the derangement, its location, its

cause, by means of effects which appear only when the horse moves. Then treat the cause by means of the low airs, using these as gymnastic exercises, a method of physical culture.

CHAPTER XXV

THE JAMBETTES

By means of the flexions of the neck and the lower jaw, by the pirouette, the reversed pirouette, and the movement backward, we have now suppled the different parts of the horse's body. We have not, however, yet suppled the limbs. And since these are the essential agents in locomotion, these also must be trained to execute their strides without stiffness, since this would cause constraint, lameness, and inequality.

For this, we have the same means of controlling the horse as before — the right and left reins, the right and left legs of the rider, and his accuracy of seat. The hands holding the reins are in their regular position when they are at the same height as the elbows. When they are lower than the elbows, the position is called "hands down," and produces a special effect. Hands higher than the elbows is "hands up," and this also has a special effect. These three effects of the hands are communicated to the lower jaw, to the head, to the neck, and to the fore hand, and act by the play of the various articulations of these members.

It is evident, however, that these different effects of the hands are not understood by the horse; so that it is only by means of exercises to supple the

different joints and to make it understand the meaning of these effects of hand, that we at length obtain that complete command over the fore legs which is the *sine qua non* of controlled locomotion.

The same principles apply also to the horse's hind legs. The rider's legs produce three different effects according to their position on the horse's flanks. Four inches behind the girths, pressure of the rider's legs stimulates the horse's rear limbs to a movement of impulsion forward. Near the girths, this pressure maintains this action of the horse's hind legs, equally forward, with the same elevation, and at the same speed. But the rider's legs pressed three inches back of the first position will draw the horse's hind legs forward under its body, and result in a position which brings the forward impulse to a stop, or even produces motion backward. Only by exercises suppling the hind legs do we make the horse understand the meaning of these effects.

There is no other name for these exercises for suppling the limbs except the French name *jambettes*, from *jambes*, meaning legs.

This exercise of the *jambettes* is, however, highly useful for still another purpose. Since the horse's equilibrium is the *sine qua non* of the *équitation savante*, it is very necessary that the rider should be able, at will, to place the fore legs of his mount perpendicular to its body and to the ground. Control of each several limb by means of reins and legs makes it possible for the cavalier to rectify immedi-

ately a wrong position of any one. When, therefore, the horse has all its legs perpendicular to the ground and parallel to one another, there exists the state of equilibrium with correct location of the center of gravity. The rider's seat is accurate, so that a transfer of his weight, forward, to the right, to the left, or backward, impels the horse in one of these directions.

The exercises commence with the horse standing still. The front legs are given two kinds of *jambette*, the first of which involves the flexion of the *scapulo-humeralis* and the *radio-humeralis*.

A great many trainers give this exercise on foot. The right rein, preferably at first the snaffle, is held in the right hand. The trainer, holding the whip in his left hand, touches very gently the horse's right leg, repeating very gentle strokes until the animal lifts its right fore leg. This action, when secured, is immediately rewarded by the caress.

The process is now continued until the leg is held in position, foot off the ground, knee forward, lower leg down. Very soon, the mere presence of the whip accompanied by a partial flexion with the right rein, will be sufficient to maintain the leg flexed in the air. Then the whip is progressively suppressed, and the *jambette* asked by a partial flexion by means of the right rein. At this point, everything is reversed, and the *jambette* of the left fore leg taught in the same way. The great difficulty is to discover just the spot on the horse's leg where the touch of the whip will best stimulate the movement. This

cannot be told in advance. Each horse has its peculiar sensibility, which must be discovered by experiment.

When the *jambette* both to the right and to the left is obtained by means of the snaffle, it is asked in the same way by the bit. When everything is thoroughly mastered with the trainer on foot, the latter mounts, and repeats the exercise by partial flexions of the neck, without using the whip. If, however, the horse does not understand when first mounted, it can be helped out by touches of the whip on shoulder or leg. But the whip should be eliminated as soon as possible.

Another way of obtaining the same *jambette* is to begin mounted. It is evident that, with the horse standing, a partial flexion of the neck to the right will shift on to the left fore leg the weight formerly carried by the right fore leg. This, therefore, being unloaded, tends to be raised from the ground. If, now, the trainer, at the first sign of this lifting, rewards the horse with caresses, the latter will very soon comprehend what is wanted; and, at the partial flexion of the neck, will hold up the right fore leg. (Figure 27.) The same means reversed operates to secure the elevation of the left fore leg.

During this practice on the *jambettes*, the rider's legs maintain the horse standing and straight, and prevent movement backwards. Here, then, are the principles which obtain the flexion at the *scapulo-humeralis* articulation.

Figure 27. *JAMBETTE:* FLEXION OF THE RIGHT FORE LEG

Figure 28. *JAMBETTE:* EXTENSION OF THE RIGHT FORE LEG

Figure 29. *JAMBETTE:* FLEXION OF THE RIGHT HIND LEG

When this form of the exercise is well understood, the trainer proceeds to the second form, in which the entire fore leg is extended forward.

For this, the rider's hand, in calling for the partial flexion of the neck, is first carried at the regular position, or, if necessary, a little lower. This position of the hand gives the fixed point at the atlas region, and thus acts directly on the *rhomboideus* muscle, which by its contraction raises the fore leg, and on the *trapezius* which holds the fore leg raised and flexed. In the meantime, the low position of the hand, as the flexion is asked, inhibits the action of the *mastoido-humeralis*. If now the hand is raised progressively from its low position, the tension from the fixed point at the atlas region will be communicated to the *mastoido-humeralis*, which will enter into action, extend the entire fore leg forward, and hold it there so long as the fixed point remains at the atlas region. This exercise is, then, the second form of the *jambette*. (Figure 28.)

These *jambettes* will teach the horse to raise its fore legs and to extend them at the effect produced by the hands of the rider, both in motion and standing still. By this means the fore legs are so placed as to receive and support their proper portion of the entire load. The partial flexions used to obtain a single *jambette* to the right or left are now replaced by a direct flexion of the lower jaw and neck, which gives the alternate *jambettes* of the two limbs. By the two positions of the hands, low for the flex-

ion of the *scapulo-humeralis* articulation, high for the extension of the lower leg, these movements are made to occur alternately, both with the horse standing and in motion.

There are, then, three effects of the hand holding the reins. The first prevents movement forward. The second directs the body when in motion. The third raises and sustains the front hand either standing or moving.

The *jambettes* of the hind legs are obtained by the effects of the rider's legs, and involve nothing more than a flexion of a limb sustained for a short time. As soon as the effect has ceased, the horse's leg returns to the ground for the next stride. (Figure 29.)

The value of the *jambettes* of the hind legs is that they enable the rider to set the limbs at right angles to the ground and parallel to each other when the horse is standing; or when the horse is in motion, they enable the rider to secure an equal impulse from both hind legs.

For it is obvious that it is not by the lifted limb that the horse sends its body forward, but by the other which is on the ground. For example, the left hind foot cannot be lifted, unless the right hind foot is in contact with the ground, in order that the right leg may bear the load which the left has been supporting. The right leg is, therefore, in position for the impulsion. But when this impulsion is finished, the left leg will have returned to the

ground under the center of gravity and in position, in its turn, to act as support for the load and to deliver the forward thrust during the brief interval when the right leg is in the air. For this reason, it is essential that each hind leg, after the *jambette*, shall return to the ground, either at the perpendicular or forward of it, never behind.

To obtain the *jambette* of the right hind leg with the horse standing, the rider, by the effect of his left leg, fixes the horse's left hind leg upon the ground, and with his right, asks the lifting of the right hind leg. The rider's desire will not at first be understood by the horse. But with repetitions and caresses, the leg soon comes to be held in the air. Then the *jambette* of the other leg is taught with everything reversed.

When the *jambettes* of all four legs are thoroughly learned, it then depends simply upon the equestrian tact, the skill in fingering, and the accuracy of seat of the rider, to obtain any desired movement or gait; for the rider now has mastership over his horse's legs, which are its only means of locomotion.

CHAPTER XXVI

THE SPANISH WALK

In the Spanish walk, the horse extends alternately its front legs forward to their full length, holds them extended for a brief time, and then steps forward. Why this gait is called "Spanish" is a mystery. Possibly it is because the Spanish jennet has commonly an exaggerated action forward, though this is never so marked as in the Spanish walk. The air is also sometimes called the "soldier's walk."

The Spanish walk is the first movement of the so-called high school or circus equitation. It is also employed by the reasoned equitation for show purposes. Both schools have used it as a means of teaching the Spanish trot and various other movements of the high school.

I, on the contrary, do not use the Spanish trot for show purposes, but only as a gymnastic exercise, to obtain the greatest muscular development of the animal, to supple various portions of the body, to equalize the strides of the four limbs, and to secure a uniformly energetic action throughout the entire mechanism. For me, therefore, the Spanish walk is not an end, but a means toward the suppleness and activity which results from practicing it.

When the Spanish walk is asked from a horse that is so far educated as to preserve the state of equilib-

rium during all movements, it becomes a most valuable exercise for instilling the idea of the diagonal, as well as for making the horse energetic and active at the other gaits. But when the Spanish walk is obtained by the aid of straps, whips, or other devices, and is used only for show, the gait is neither attractive to the onlooker nor beneficial to the horse. In these circumstances, though it elevates its front legs, it does not really advance upon them in this position. Instead, it draws its fore legs backward from their extended position and makes only a half-step forward. Meanwhile, the hind legs drag inactive; the head and neck take any sort of position; and the rider's hand, at each step, jerks up and down. The movement becomes a mere grimace, performed under the direction of a rider who knows no better.

To teach the Spanish walk with the whip, the trainer places the horse with its right side close to a fence or wall, and taking the reins in his left hand, touches the horse's left fore leg with the whip. It is difficult to say at just what part of the limb the whip should first make its effect. Some horses will understand quicker if the pastern is touched. For others, the best point is the back tendon, the shin, the fore arm, or the knee. The rider must discover the spot by trial; but the place once found, the first touch of the whip should always be at that point.

When the horse learns to raise its foot from the ground at the contact of the whip, the trainer

should at first rest satisfied with this concession. After a time, the horse will hold its leg in the air. If the horse paws the ground, prevent the action, but do not punish. Pawing is merely a sign of impatience, which, however, must not be allowed to become a habit.

When the horse holds its two legs flexed equally well, it has to be taught to extend them forward. For this, the whip is brought to the point of the shoulder, and the trainer perseveres in light, repeated touches until the bent limb is extended forward. As soon as this occurs, the whip is no longer applied at the first point, whatever that was, but the touch at the point of the shoulder obtains both the raising of the leg and its extension.

The horse, having now reached the point where it holds its leg extended, the next matter is the forward step. For this, there are two devices. One of these, adopted by Fillis, is to pull the animal forward with the reins, and thus force it to set down its lifted foot at a point corresponding to the extension of the leg. This method is least satisfactory, because of the long time it takes to make the horse comprehend what is wanted of it.

The second method is easier and more immediately successful. The trainer, always facing backward, reins in his left hand, whip in his right, and keeping the horse's right side against the barrier, chirps with his tongue, and touches the horse's left flank with the whip, until the horse goes forward at

an ordinary walk. Little by little, this walk is made slower and slower. At this stage, the two movements are asked together. The horse now moving at the slow walk, the whip touches the point of the shoulder precisely as when the animal was standing still. Thereupon, very shortly, the horse extends its left shoulder and executes the first step of the Spanish walk. If now the trainer knows how, by means of caresses and encouragements, to push this first success, the horse will soon learn to walk with extended fore legs. It is hardly necessary to add that, throughout all this work, the two sides are alternated and treated equally.

After this work on foot has continued until the horse is thoroughly confirmed in the gait, the trainer mounts, and once more obtains the extension by touching the horse's shoulder with the whip. When this much is done well and easily, standing, the rider by means of his legs, sends the horse forward at a slow walk. He then, with the whip, touches the shoulder next the wall shortly before the leg on that side has begun to lift.

When the animal has learned to extend one leg in proper cadence, the trainer reverses sides, and trains the other leg in the same manner.

The movement being executed by either leg alone, the next step is to combine the two. Some trainers, for this, use two whips, one on each side. Others have an assistant mount, while they, on foot, as the assistant sends the horse forward with

legs or spurs, touch the shoulders with the whip in proper sequence. Thus the rider raises first one hand and then the other to secure the extension of the corresponding leg, and the trainer on foot supplements this effect by touches of the whip. In this manner, any quadruped can be taught the Spanish walk — elephant, cow, donkey. A great many such creatures have, in fact, been exhibited. But, as Fillis says, a horse doing the Spanish walk is only mechanized to execute grimaces with its front legs while the hind legs drag on the ground. All the work has been directed at the front legs to the complete neglect of the hind hand. ("Why-Not" and "Pierrot" at the Spanish walk, Figures 30 and 31.)

Masters of the scientific equitation object to the foregoing method of obtaining the Spanish walk. Their principles admit teaching this gait only when the horse is mounted, and without any use of the whip. Unfortunately, grand masters of equitation are not born grand masters; and there is not one of us who, at the beginning of our careers, has not spent years over the Spanish walk, on foot, with whip, assistant, and the rest. After long and assiduous labor, we find it simple enough to obtain the air mounted, without preparatory work on foot. Of course it is simple for us now. But it was not so simple fifty years ago; and we were proud enough of the first horse that we put through the Spanish walk. I say this in order to encourage the young. When they have had the experience of grand mas-

Figure 30. SPANISH WALK: LEFT DIAGONAL

Figure 31. SPANISH WALK: RIGHT DIAGONAL

ters, they also will obtain the step mounted and without aid.

I have now arrived at the point which I had in view, when, in discussing such movements as gallop, change of direction, shoulder-in, and the like, I disputed the ideas of Baucher and Fillis as to the effects which should be applied. The reader will find that what now follows will be clearer if he will refer back to the portions of the book where these topics were earlier discussed.

Baucher and Fillis teach the Spanish walk only when mounted, just as I do. Why, then, have these grand masters fallen into the error of applying certain principles to certain movements, and yet disallowing these same principles in similar cases?

I quote, by way of example, Baucher's theory of the Spanish walk, the italics mine. To the portion in italics, I call the reader's special attention.

"One understands by Spanish walk the action of a horse which, in walking, gives all the extension possible to each of its front legs alternately. . . . In order to obtain this movement, it is first necessary to force the horse to sustain one of its legs in the air. One will arrive at this promptly by *flexing the head* of the horse, for example, *to the right with the rein of the snaffle or the bridle.* That position taken, *one will carry the hand holding the bridle to the left, while at the same time sustaining the horse strongly by means of his own legs. Nevertheless, the left* [leg] *will be applied to the flank with more energy, to make opposition to*

the hand. Little by little, the weight of the horse's right leg will be carried upon the left, and the first [the right] *leg will quit the ground.*"

Fillis teaches exactly the same principles and the same means. My procedure also is precisely like that of the two grand masters. For although there is always the difference that they ask the movement simply as a movement, while I employ it only as a gymnastic exercise and a means to something else, yet our methods of obtaining the action are the same.

But the point I am aiming at is to show that Baucher and Fillis teach that the partial flexion of the head to the right unloads the right front leg, and, of course, loads the left. But why is the head carried to the right to unload the right leg, which is the pivot and support in such different movements as shoulder-in, change of direction, and others; and why is the head carried to the left to load the right shoulder in order to obtain the gallop on the right lead? When we ask the energetic action of one of our own members, so far as we can, we unload it. To kick the ball with the right foot, we put all the weight of the body on the left. Then with the right — "there she goes"! But to load a limb from which we ask energetic action, is a curious kind of logic or science.

Every experienced riding-master will keep reminding his students that there is a point in the educational progress of every horse, where the ani-

mal tends to stay behind, rather than upon, the hand. I have spent some years in studying this anomaly. Baucher and Fillis also recognize this difficulty; and recommend suspending further progress and beginning over again to find the contact upon the hand by energetic impulsion at a fast trot or gallop. I too have practiced this method; but I find that after the impulsion at the trot my horse is excited and willful.

I reason the matter out thus. When the horse, at the Spanish walk, raises, extends, and sustains, alternately, the two front legs, it must be evident that this is done by the contraction of the two great muscles of the neck, the *rhomboideus* and the *mastoido-humeralis*, which have their fixed point in the atlas region. Now, this gait, obviously, cannot be other than the product of the diagonal effect. If, then, the diagonal effect produces the Spanish walk, and if the Spanish walk cannot be obtained without the fixed point at the atlas region, the contact of the bit must be the consequence of the fixed point, and therefore a result of the Spanish walk. *Ergo*, if my horse loses the contact with the bit, the Spanish walk will restore it again. This means, deduced from theory, I have found never to fail in practice.

When, therefore, a horse, in the progress of its training, begins to stay behind the hand, the best remedy is the Spanish walk. Thus, no time is lost; and the horse, always under the direction of the diagonal effect, is neither excited nor nervous.

Some ten years ago E. L. Anderson, author of *Modern Horsemanship*, wrote me, complaining that the Spanish walk and trot disturbs the fineness of a horse's mouth, so necessary for the piaffer and the passage. I replied that this is certainly the fact. In the passage and the piaffer, the exertion being less than in the Spanish walk and trot, the *rhomboideus* acts more strongly than the *mastoido-humeralis*. In the Spanish walk and trot, which involve greater exertion, the conditions are reversed, and the *mastoido-humeralis* acts the more strongly. But it is the action of the first of these muscles, the *rhomboideus*, that gives the more sensitive contact against the hand.

CHAPTER XXVII

THE SPANISH AND THE FLYING TROT

THE Spanish trot is one of the principal low airs of the *haut école* when exhibited in the circus. For the scientific equitation, it is a valuable gymnastic exercise for developing the horse's muscular energy, upon which it makes very great demands.

It is, like the piaffer and the passage, the manifestation of perfect diagonal action. It differs, however, from the piaffer and the passage, in that, in these two airs of manege, the knees are flexed, while, in the Spanish trot, as in the Spanish walk, the fore legs are fully extended, held in this position for an instant of inactivity, and then made to gain ground forward. The impulse for each step is given by the diagonal hind leg, which rises at the same time with the fore leg on the other side, and is held inactive for the same period. In other words, diagonal bipeds are raised, hang for a moment in the air with the fore leg extended, and then are set down together a step in advance. (Figures 32, 33.)

All the masters of the scientific epuitation have agreed that the Spanish trot is next in sequence to the Spanish walk. Baucher and Fillis teach the progression: Spanish walk, Spanish trot, passage, piaffer. I, on the other hand, almost reverse this

order, and take first the piaffer, than the passage, finally the Spanish walk and trot.

My reasons for this unusual procedure are these. Neither the Spanish walk nor trot can be obtained until after the horse has been completely established in its collection, assemblage, and equilibrium, so that all the progressive movements which precede the Spanish walk are executed without disturbing the state. But the highest possible manifestation of the state of assemblage is the piaffer. No assemblage, no piaffer, is almost an equestrian proverb. When, therefore, I have the piaffer, I have also the proof of the maximum of assemblage. The center of gravity is fixed exactly below my own vertebral column, while the equilibrium is so perfect that shifting my weight to my right or my left ischium raises alternately the diagonal bipeds of the horse, and passing the load slightly forward causes the horse, without losing cadence or equilibrium, slightly to gain ground forward, and thus change to the passage.

In order to obtain the piaffer, I place the horse's head perpendicular to the ground, but with its neck not quite so high as for the ordinary trot. For if the head and neck are high, the two muscles of the neck, *rhomboideus* and *mastoido-humeralis*, by their fixed point at the atlas region, are equally in contact with my hand. This is precisely what I do not want. The *rhomboideus* will raise shoulder, scapula, and leg; but the *mastoido-humeralis* will extend the

Figure 32. SPANISH TROT: RIGHT DIAGONAL

Figure 33. SPANISH TROT: LEFT DIAGONAL

leg forward. Therefore it follows that I want for the piaffer all the *rhomboideus* possible, but not too much of the *mastoido-humeralis*. In order for the foot in the piaffer to return to the same spot from which it was lifted, the horse must lift its fore leg forward, but with flexed knee. Too much action of the *mastoido-humeralis* will extend the leg so far that I cannot call back the foot to the proper spot and still preserve the speed and cadence of the trot.

When I have secured the piaffer, I add the complication of a very slow forward progress, and have the passage. Then, having the passage, I give a little more impulsion forward, by lifting my coccyx out of the saddle, but not very far or too high, and by shifting the center of gravity a little more forward than for the passage. My horse, thereupon, lifts its head a little higher and finds contact with the bit. The two muscles concerned have now, to an equal degree, their fixed points in the atlas region. The *rhomboideus*, continuing to act as before, raises the leg. But the *mastoido-humeralis*, acting more strongly, extends the leg forward, and I have the Spanish trot. I still have the assemblage, but under different conditions.

The teachings of the grand masters for these movements are very different from my own. They, as I have explained, begin with the Spanish walk. The horse's head and neck are up. The point of contact is established. The two neck muscles act together. The leg is raised and extended, stiff

throughout its length. The spurs are applied, and push the horse forward upon the front leg, which thereupon returns to the ground, and the first step is taken. The second step follows, secured from the other diagonal biped by the same means, and the walk continues. When the Spanish walk is well understood and properly performed, a stronger impulsion of the hind legs by the spurs precipitates this into the Spanish trot.

The method answers very well thus far. But when, after this training, the rider asks the passage, the horse, as before, extends its front legs, but the equilibrium is not adequate to the movement, and quarrels and fights begin between the trainer and the horse. When, at the end of these fights, the passage is obtained, they still have to be gone through with once more to obtain the piaffer. It all comes about because the masters keep diminishing the extension by diminishing the impulsion. I, on the contrary, beginning the series of movements at the other end, keep increasing the impulsion, always by and in the state of equilibrium.

The Spanish trot needs good conformation and great energy on the part of the horse; and on the part of the rider, a great precision of effects, if the air is to be taught according to the principles of the reasoned equitation. If the horse preserves the condition of equilibrium, the movement is very brilliant and graceful. The animal has an action forward and high, yet without manifesting too

severe exertion. The suppleness of the well-cadenced and regular movements is very apparent, and the horse behaves as if it liked the action. But when the equilibrium is absent, then the exertion is very evident. The entire body is stiff. The gait is wearying to the animal, so that it must be sent against the bit by the attack of the spurs. These, in turn, drive it forward so violently that the bit has to act with strong effect, in order to raise the front legs and prevent the action from being forward instead of high. The proficient esquire does not regard this last form of the Spanish trot the perfection of the air. But the beginner is, of course, quite satisfied with it, until after he has trained three horses. Only after he is sure of obtaining the Spanish trot at all, does he begin to see that there is also quality in the work and to try to secure that.

There are also other methods of obtaining the Spanish trot. One of these is based on the system for the Spanish walk in which the trainer on foot touches the horse's shoulders alternately with the whip. The walk being learned by this means, the trainer accelerates the movement, until with practice the horse breaks into a gait which has the cadence and height of the Spanish trot. But since the whip acts on the front hand only, although the fore legs lift high enough, the hind legs drag upon the ground with neither action nor elevation.

Another method is still less scientific. Straps are attached to the pasterns of the front legs. Each of

these straps is held by a man, who stands some six feet in front of the horse and facing it. Another man, holding reins and whip, touches one shoulder with the whip, while the man who holds the strap pulls the corresponding foot off the ground and holds the leg extended so long as the whip takes effect. Then the sides are reversed. As soon as the horse raises and extends its fore legs successively, a fourth man is added. This latter from behind, by means of a long whip applied to the hind legs, urges the horse forward, while the two men in front alternately pull the fore legs by the straps.

Horses trained by either of these two methods are stupid, stiff, inactive, made into machines. They have the appearance of slaves, acting against their will. These systems of training belong, of course, solely to the circus. Neither of them is recognized by the scientific equitation.

The Spanish trot, done slowly and in cadence, is considered the most brilliant of the horse's gaits. The action is in complete accord with all the natural powers of the animal; and though the height attained is greater than in the ordinary trot, it is nevertheless entirely possible to the mechanism involved. The air, therefore, can most properly be used as a gymnastic exercise for developing energy and action; and is of special benefit to such horses as are lacking in action, indolent, or given to tripping and stumbling. All this, however, is on the condition that the work with the Spanish trot is so

moderate and so progressive that the horse has time to develop the muscular strength needed to execute the air without overmuch effort.

THE FLYING TROT

THE flying trot has the same cadence and high step as the Spanish trot, but the movement forward is at greater speed. Since, then, the action is both high and rapid, it demands great strength and energy on the part of the horse. Some hackneys, however, take naturally the flying trot when moderately supported by the contact of the bits.

The air cannot be executed on every kind of ground. If the track is too soft, the hind legs fail to give the needed drive. If too hard, the blow of the front feet on the ground will be painful, and the horse will be discouraged.

The movement is obtained by gradually accelerating the Spanish trot, but without keeping the horse too long at the exercise. Evidently, since this added speed does not alter the elevation of the diagonal bipeds, the gait demands from the esquire or master the greatest accuracy of seat and effects. For the horse, at the flying trot, gets high off the ground; and if the seat of the rider and his effects are not exactly correct and accurate, the horse is disturbed in its cadence and the elevation of the action is lost.

Personally, I should not care for the Spanish trot if it were not the means of obtaining the flying trot,

which is extraordinarily enjoyable and exhilarating — though, of course, it is to be indulged in only occasionally when the ground permits. I recommend to the beginner to train several horses at the Spanish trot before attempting the more difficult gait; and furthermore, to make sure that his animal is really able, after suitable practice, to execute the movement without injury or discouragement.

CHAPTER XXVIII

THE PIAFFER

ANOTHER of the low airs is the piaffer, in which the horse trots, with perfect motion of its diagonal bipeds alternately, yet without progress in any direction. The piaffer is, then, one stage beyond the passage, since it presupposes an even more perfect state of equilibrium and a still further development of the horse's muscular strength. All masters regard the piaffer as the foundation, the *sine qua non*, of the whole scientific equitation.

There are, however, two sorts of piaffer, the slow and the quick. There is also still another kind, that exhibited by a horse which, through excitement, excess of energy, or nervous temperament, cannot stand still. If, then, the rider does not permit the animal to go forward, it prances impatiently on the same spot. Such a mount is annoying and even dangerous to an inexperienced horseman; so that the fault needs to be corrected by a moderate and progressive training, in which the chief difficulty is to stop the creature and to keep it still.

Both the quick and the slow piaffers are recognized by the scientific equitation. They are, indeed, closely related. The quick piaffer, as its name suggests, has the more rapid *tempo*. It is also com-

monly the more easily obtained, since it needs less energy on the part of the horse and less tact on the part of the rider. Notice that, although I say less tact, the tact must nevertheless be of a high order.

The slow piaffer is rarely seen. Baucher, Fillis, and myself have obtained it from a limited number of horses, each of which has left a name in the countries where it has been shown. Even the quick piaffer, though attained by a greater number of animals, is no ordinary feat of horsemanship.

It would take volumes to describe and explain the machines, straps, pillars, and other instruments, more or less complicated, which have been employed to obtain an action so agreeable, so elegant, and so difficult as the quick piaffer, and to set forth the theories of able masters with regard to it. But to obtain the slow piaffer, what study is needed, what labor without end! It is the dream which few, very few, masters have realized.

From Xenophon to Pluvinel, horsemen have sought the *rassemble* or assemblage. In Pluvinel's time the pillars were used to obtain this state; and as master has succeeded master, some horses have come to the piaffer by this and other mechanical means. Even to-day the pillars are still employed in the military riding-schools of the nations of the world, always for the same reason and to the same effect. Results are uncertain or negative. Brilliant as the outcome may sometimes be, all the evidence goes to show that they are seldom enough anything

of the sort. The scientific equitation cannot consider, teach, or admit any such devices.

The quick piaffer has the cadence of the trot, but the movements are rapid, and the action not high. To obtain this type of piaffer, the horse is first brought to the most complete possible state of equilibrium and kept in this condition at the manege walk. The rider then makes repeated attacks with the spurs, first with one, then with the other, in diagonal, at a *tempo* faster than for the passage and comparable to that of quarter-notes in music. At each attack the spur touches the flank near the girth, while the leg still maintains its pressure, and then moves away no more than the twelfth of an inch.

In the meantime, the rider, by the accuracy of his seat, helped by his fingering on the bridle, receives the excess of action given by the spurs, and holds the center of this action at the center of gravity. He should, thereupon, feel the hind limbs rise and fall alternately, a little in front of the perpendicular. If the hind legs are too far in front of the perpendicular, the horse cannot continue to move, except by contracting the two *vasti* muscles and rearing high. If when the horse rears, the rider instantly pushes it forward by leaning sharply to the front, the horse will leap. But if the rider does not immediately check the rearing, the horse will fall backward at once or paw the air with its front feet and then perhaps fall. But so long as the rider feels

by way of his seat the action of the hind legs, everything is right for a beginning. One must be careful at this stage not to keep the horse too long at the exercise. Five or six repetitions are sufficient.

As for the fingering of the hand on the reins, this has to meet three conditions. The fingers should close on the reins in the same *tempo* with the diagonal effect of the legs, and should be proportioned to the cadence and strength of these. The fingering must allow the center of gravity, so to say, to filter imperceptibly to the front side of the medial plane, and not under any condition let it get behind this position. *A fortiori* the fingering must maintain always the assemblage, collection, and equilibrium.

As soon, therefore, as any derangement of these conditions appears, no matter how slight, all diagonal effect must stop instantly, and the horse be sent forward with decision and energy. After a few forward steps, the horse is once more brought to a stand, its calmness reëstablished, the equilibrium once more obtained, and the piaffer again asked. As a general principle, every execution of the piaffer, no matter what the stage of progress, should be followed by at least one or two steps forward. Otherwise, the horse would get into the way of stopping with its legs inside the perpendicular, and this, with time and habit, would create the *acculer*.

When the piaffer is first obtained, no one can prophesy how it will develop. It nearly always begins as the quick form; and with this, at first, the

Figure 34. PIAFFER: RIGHT DIAGONAL

Figure 35. PIAFFER: LEFT DIAGONAL

trainer should be satisfied. He should then proceed, by calmness, moderation, and equestrian tact, to regulate and to establish the rhythm and cadence of each diagonal stride, their height and *tempo*. With time and moderation, the horse, more or less excited at the beginning, will calm itself, will understand better the cadence demanded by the esquire, and with the habit of calmness will respond to the timing of the effects of hands and legs. Then, by diminishing little by little the rapidity of the step, the horse is finally brought to the slow piaffer, the only really perfect and scientific form.

The slow piaffer is the poetry of action of the horse in motion and is admitted by all schools to be the crown of the scientific equitation. Baucher, Fillis, and I employ the quick piaffer only as a means of obtaining the slow, since we consider this to be the only difficult and desirable form. The two grand masters regard the slow piaffer as the absolute proof of the state of equilibrium in motion, and therefore as the most difficult of the low airs. I too accept the slow piaffer as the proof of equilibrium in motion, but I also employ it as a part of my system of physical culture, to develop the muscles of the horse's back, loins, and haunches. (Figures 34, 35.)

Baucher and Fillis, as I have already explained, do not attempt the piaffer with their horses until the diagonal effect is well understood, as in the Spanish walk, Spanish trot, and passage. Baucher,

at the beginning of the training, works his horses for a considerable time on foot, with the whip. All this greatly aids the animals in understanding the movements of the piaffer. Fillis works his horses on foot very much less than Baucher, but has already trained them in diagonal movements before he asks the piaffer. Both, for a horse to be taught the piaffer, select with the greatest care an animal that has, to start with, the required conformation, strength, and soundness, with the moral and physical qualities that give action and energy. And since the horse which has these qualities sustains the state of equilibrium a great deal better than does one of inferior grade, such an animal has really a value equivalent to the time and effort needed to secure the degree of education proved by the slow piaffer. I, on the other hand, do not trouble myself over the choice of a horse. The more inferior it is, the more faulty its conformation, the more interesting becomes its education. The more difficult the work, the more the fun of doing it.

Both Baucher and Fillis have had some violent fights with their horses. They put a young beginner in the saddle to hold the reins, while they, beside the horse on foot, direct its movements with small or long whips. I work very little on foot. I never, or rarely, use a whip. I do all the work myself; and I very seldom, when mounted, have a quarrel with my horse or an act of defense from it. Six months after I begin training, the horse has already ceased

to be the caricature which I bought. I explain these points, not to dwell upon my own ideas, but to aid the reader in understanding the different procedures of the different grand masters which I shall now discuss.

The difference between the quick piaffer and the slow is that in the quick piaffer the horse's legs, acting in diagonal, fall more quickly to the ground under the pull of gravity. But in any case, the two diagonal legs which support the body are acting only during the time during which the other two are in the air. Evidently, then, if two diagonal members remain longer upon the ground, the other two will have to stay longer in the air, and *vice versa*.

Now the question is, which requires the greater effort on the part of the horse, to keep its body balanced for the longer time on two feet, or to hold two legs off the ground and flexed?

But the shorter the time the feet remain in the air, the more rapid is the action, as in the quick piaffer. On the other hand, the slower the action, the greater the loss of the original upward impulse. The more powerful, therefore, must be the muscular contraction and the more accurate the equilibrium. Evidently, then, the horse needs more energy for the slow piaffer than for the quick; and more for the quick piaffer than for the passage, trot, or gallop, since in these last the animal is helped by its own forward motion.

Baucher and Fillis put their horses at the passage, and then, by altering the *tempo* of their attacks in diagonal, they slackened still further the already slow speed of that air. After a time, the horse would continue the cadence of the passage, but without advancing. Then they had the slow piaffer. Given the qualities of their horses, this was a rational method. But even so, there always came a time of defenses, fights, revolts. If I employed this method with the kind of horses that I train, I should kill the animals before they developed the strength of muscle needed for the slow piaffer!

I hold that it is no special obstacle to the piaffer if the horse's neck and legs are a little stiff, provided always that they are strong enough to serve as supports, two at a time. Where, then, is the great center of development of the forces which keep the whole inert weight balanced on two legs, keep the balance, and return two feet to the ground and raise the other two, without advancing or backing? I answer, at the coupling, the sacrum, the ilium, the pelvis, for the rear half of the body; and at the thorax for the front half.

Twenty years ago, E. L. Anderson, in his *Modern Horsemanship*, wrote: "Master H. L. de Bussigny professes that all the resistance of the horse is located in the posterior half of the horse; he is in contradiction with all the other masters, who find the center of resistance in the neck." I regard the iliac region, from the last lumbar vertebra to the

end of the sacrum, as the point of union of the fore hand with the hind hand. Here is the junction of these two parts, where they are united by the muscles. If there were not this union, if the volitional impulse came as far as the last dorsal vertebra and there stopped, quadrupedal locomotion would be quite impossible.

All this is assuming that the horse is free from any human interference. But if the horse's spine is carrying a load, we cannot neglect the influence of this weight upon the two parts of the body, which are, by instinct, a unit and under the same acts of will. Their point of union, in my opinion, is this centrifugal region where the forces are assembled. It is like the mechanical coupling which unites the locomotive to the loaded cars behind it. At this point all the pull of the engine is concentrated against the weight opposed to it. If the cars were not loaded, the coupling between the locomotive and the first car would not need to be so strong.

If a horse, when running or jumping, is watched during a fall, it is easy to discover that the forward part of the body gives way first. This is because the hind legs do not come forward in time to act their part as supports. But the hind legs, of themselves, have no power to come forward below the center of gravity. The failure is in the loins, the back, which have not pulled the legs forward in time to lend their support, and thus to prevent the fall of the whole body.

Or note how an athlete does a somersault. He leaps into the air, and then, solely by the action of his loins, he turns his feet up and his head down, and then alights upon his feet. Or suppose a man is running and falls. If, as he fell, he could bring his loins into action sufficiently to bring his legs under him, the fall would not occur.

I have dwelt long on this topic of strength of loins in the saddle horse, because it is my thoroughgoing conviction that the various schools of equitation have emphasized overmuch the correctness of movements of the horse's limbs, to the complete neglect of the muscular development of the coupling, a matter which, in fact, they do not even mention. It is to develop this part of the horse's body that I employ the two piaffers, and especially the slow one, just as soon as my mount has attained to a muscular strength sufficient to begin a movement needing so much power at the loins.

I have asked and obtained the slow piaffer by the methods of Baucher and Fillis; but I have always found that this procedure results in great exertion, great fatigue, and very often irritation and incipient stages of revolt. To obviate these drawbacks, I have developed a procedure which has never failed to secure the result at which I aim.

I do not attempt the piaffer until my horse is at the state of perfect equilibrium during all the movements of the progression up to this stage, and is complete as a park hack. Then I commence the

slow piaffer. I prefer to begin this late in the autumn, so as to have a whole winter before me.

First of all, I perfect the manege walk to the point where I can myself determine on which diagonal biped the horse shall start. When I am complete master of either diagonal biped, I begin to carry my horse backward, with the same cadence and *tempo*. I execute six steps forward and six backward. Then I interpolate a slow trot, which I call the recreation trot, and begin again. I keep my horse always straight, and I take special pains to have the strides of the two diagonal bipeds supple and precisely alike. I realize that my horse will need a great muscular development in order to gain in height what he loses in motion forward. Therefore, I use great moderation, and give a large amount of recreative exercise.

After several days, if the work is well done, it becomes apparent that each diagonal biped is staying in the air a slightly longer time than before. At this point, I need to hold on to myself, and to temper my impatience to begin the *tempo* of the trot. But I continue, I favor, I protect, I recompense, more and more and patiently.

The time comes, always and quite soon, that the horse walks step by step, so slowly that each diagonal biped, in cadence, stays in the air a longer or shorter time. When this habit is completely fixed, I stop the horse and attack him very gently so that he merely feels the pressure of my spurs. When the

horse knows that I have the spurs ready at my disposal, I put him at the manege walk, at the slowest possible gait, step by step. Then I begin to activate the entire mechanism, but not by any quicker action of my legs or fingers. I keep the same *tempo*, with an even more accurately measured power of my effects, and I incline my body slightly forward, so as to shift the center of gravity and lighten the loins. At the slightest disorder, I stop everything, reëstablish calm, and begin again.

It is very seldom that I have to start over more than three times before I obtain one or two movements of the loins. For the rider who has not had the experience, it is a strange sensation that he now receives through the seat. As the horse flexes its haunches and hocks below its pelvis, one feels as if the horse were on the point of kicking, first with one leg and then with the other. It is really nothing of that sort. It is simply the first of the two indications that the croup is lifting higher. If, after this first manifestation, you know how to recompense, to calm, and to rest, it becomes easy to secure two or four or six. Do not accept an odd number of actions, because this will tend to make the horse unequal, with one side more indolent or backward than the other.

The rest is easy, merely a question of time, progression, and moderation, in order for the horse to develop the necessary strength. The slower the action, the more difficult and the more brilliant, so

long as the horse does not move either forward or backward.

When the slow piaffer begins to be understood, I prepare myself, and at each repetition of very delicate attacks well cadenced, and in the *tempo* of each step, I lift my hand a little higher, make my fingering more pronounced and precise, and raise the four legs higher and higher, two by two in diagonal. I caress all the body of the horse a great deal, speak to it in an amiable and encouraging voice, and make my horse like the lesson.

Last of all, I complete the training by shifting my own weight from haunch to haunch, without apparent movement of the upper part of my body, or of my hand, arms, thighs, or legs. At first this shifting of my weight from side to side appears to have no effect. Well, then, I begin the slow piaffer by means of my hands and legs; but when the movement is under way, I cease the effect of hands and legs, and begin the balancing on my seat. I have to try several times; and then success is assured.

After each exercise in the time of the piaffer, I carry my horse forward a few steps, bring him to rest, and either abandon him, or let him be free to stretch his spine and neck.

In brief, then, calculate accurately your effects, develop your equestrian tact, keep in your mind the principles which I have always had before me, my *deus ex machina. Labor improbus omnia vincit,*

and you will have won the *ne plus ultra* of the scientific equitation, the slow piaffer.

My own horse, "Why-Not," does the slow piaffer at the cadence of the walk, without advancing. But the taller a horse is, the more difficult is the slow piaffer for the horse to execute and for the rider to obtain.

As for the pillars, by means of these a horse can be trained to any sort of trick, to kneel down, to extend the legs, to lie down, and the like. But since these tricks are not recognized by the reasoned equitation, there is no need to touch upon them. It is only to obtain the piaffer that the new school admits the use of the pillars, copying in this the principles of the old school.

The horse is put in the pillars, and by means of the whip, is taught to raise and keep up one leg after the other, beginning with the fore limbs. By touching the chest with the whip, alternately on the right and left sides, the horse will very soon learn to raise his fore feet, by flexing his legs at the knees, first at the walk and then at the trot, as the whip is applied more rapidly.

When this movement is obtained from the front legs, the trainer operates in the same way with the hind legs.

This done, the problem is to get all four legs to act together in diagonal. Repeated touches of the whip upon the haunches, given in the cadence of the movement, tend to make the horse go forward.

But since cavesson and reins prevent this, the horse becomes more or less excited, and begins to move in diagonal, up and down on the same spot. At this point the trainer stops the horse, caresses him, and begins again.

It must be evident that, by this method, it is not possible to obtain the slow piaffer at the beginning. The first result is always the quick form. This, however, the trainer slows down by calmness and by spacing the touches of the whip farther and farther apart. Weights or bells may be attached at the pasterns to encourage the horse to carry his knees higher and higher.

There has also been invented, I think by Hanhauser, a special harness for the purpose of obtaining the movement in diagonal. A heavily padded strap is fastened to each pastern, and each pair of straps in diagonal, is buckled to the two ends of a rope. These ropes, in their turn, pass through a pulley which is fastened to a strong surcingle so that it comes close to the body at the middle of the lower side of the chest. The ropes are rather tight, so that, when the horse lifts, for example, its right front foot, the pull comes against the left rear one. Since, in addition, the horse is fixed fast in the pillars, there is nothing it can do except to go up and down in diagonal on the same spot. But the piaffer of horses trained by such mechanical methods is never elegant, supple, or brilliant. It suggests the manequins of Mme. Tussaud.

CHAPTER XXIX

THE PASSAGE

Of all the low airs which a horse can execute, the passage is the most rhythmic, the most artistic, and the most scientific. It is not an artificial gait, but an entirely regular and natural movement. Let a horse of any conformation, trained to any kind of service, be out of the stable and free. He trots at the passage. His head is up, his neck well placed, his tail in the air. Hocks, haunches, knees, and shoulders flex on their centers of motion, high, with energy, cadence, and balance. The back and loins are supple, the nostrils are well opened, and the breathing is deep even to snorting. Every joint is loose. Every limb functions with suppleness, rhythm, elegance. The horse is like a hunting-dog bounding around his master as he holds a shot-gun. He is in the air as if he would fly. (Figures 36, 37.)

But, alas, as soon as the harness is on, and the driver is on the box or the rider in the saddle, all this cadence, *tempo*, rhythm, elegance, departs. The horse becomes heavy, stupid, brutish, without energy, a slave without initiative, a submissive victim when he understands what is wanted and a restive victim when he does not. To raise the harnessed animal to the standard of its natural beauty

Figure 36. PASSAGE: RIGHT DIAGONAL

Figure 37. PASSAGE: LEFT DIAGONAL

in locomotion, to transfer the natural gifts of suppleness and elegance from the horse free to the horse mounted, is the dream, the life dream, the object of life of the masters of the scientific equitation. And I ask the horsemen, the masters from Xenophon to our own epoch, if ever a rider, mounted on a horse at the passage, has forgotten the sensation of that motion!

The passage is too often confounded with the Spanish trot, even by the generality of masters. Yet the difference is complete. More than nine tenths of the Spanish trot is done against resistance; and the fore legs are forcibly extended straight forward at full length. But at the passage, only the fore arm extends forward, the limb being flexed at the knee; and the forward step is only a third the length of the stride in the Spanish trot. Although the Spanish trot may be very beautiful when well performed, it is never so graceful, elegant, and elastic as the passage, probably because the passage is more natural to the horse than the violent exertions of the Spanish trot.

For the Spanish trot is an artificial air, which has been taught to thousands of horses, enslaved by straps, whips, severe bits, and continued repetition. Fillis says, with great truth, "Yet it is certain that the new school is in use everywhere. The man does not any more ride the horse to educate him. All the work is done on foot, with whips and straps, absolutely like the training of monkeys or goats.

It is what the public called with irony at Vienna, *pudel dressierung*, the training of poodle-dogs!"

The passage cannot be taught by this system. It requires a progressive education, based on the principles of the scientific equitation. A great many persons are not able to obtain it for lack of the perfect equestrian tact which inspires in the horse the confidence, the energy, the excess of power needed to make all his bodily mechanism move with cadence and rhythm, and to preserve perfect diagonal action, without the slightest interference of hand, leg, or seat, since this would instantly destroy equilibrium, and with it the rhythm, cadence, and *tempo*. Certain horses, indeed, by their naturally high and energetic action, do tend of themselves to execute the passage. But even these should be given the same preliminary training as the less energetic animals. Sometimes, also, the action of the fore legs is high and correct enough, while that of the hind legs is low and imperfect. But the passage cannot endure mediocrity of execution. That is painful to feel or to see. The air is possible only when the perfected state of equilibrium can be kept by the horse during all the movements of the progression of the scientific equitation.

The horse needs for the passage, after his complete education, soundness, developed muscles, the proportions of a perfect conformation, energy, a calm yet ardent nature. Most of all, it needs to be mounted by a master with the artistic tempera-

ment, who has already, in his youth, spoiled several horses, before being several times successful. One cannot hope to put a horse successfully at the passage until after he has trained five or ten horses. For when a master first begins the passage, the great, the nearly insurmountable difficulty is to obtain the first two or three manifestations of the cadence. But it is absolutely impossible for these first two or three steps to be at all pronounced or decided. They are like the ripples in a teacup compared to the steady undulation of the sea. But if the master does not recognize at once this earliest almost insensible ripple, and so continues to ask it of the horse, the horse becomes more and more confused. Neither understands what is being asked.

These first signs of the passage are, then, I say, very nearly imperceptible. But if they are recognized and rewarded, they are stored in the horse's memory. And since these first steps are the most difficult to obtain, everything possible must be done to fix the lesson in the animal's mind.

Both Fillis and I, at the first adumbrations of the passage, stop the horse, jump down, take off the curb chain and bridle, blanket the horse, give him some pieces of carrot, sugar, or apple, and dismiss him to the stable.

At the next lesson, I bridle the horse myself, using calmness and tact, and have him go through some movements in the state of perfect equilibrium,

but avoid any sort of canter or gallop, since these are in lateral biped and will only confuse. Only after the passage is learned, are canter and gallop in order.

When the horse executes these preparatory movements in the condition of equilibrium, bring it to a stand, after passing the second corner of the short side, if you work in a manege, so as to have the length of the long side before you. Here dispose your horse and yourself, calculating accurately and calmly just what you are about to ask, what effects you are to employ, and how.

You are now ready. Your horse is ready. Send your horse forward, step by step, at the manege walk. When you have the cadence of this, begin your diagonal effects. At the slightest derangement, stop, calm your horse, reëstablish the perfect order, begin again with the manege walk, and apply the diagonal effects. If you obtain two or three manifestations, two or three ripples of the approaching passage, stop by means of the *ensemble*, and caress, caress profusely, the neck, loins, and haunches.

Pass the end of the manege and continue on the long side, where, with the horse once more straight, you have space in front of you in case of difficulty. Then again, equilibrium, and forward at the manege walk. Again calculate well and take your time. Do not yourself become excited or too ambitious. If you do, the horse will feel and resent it. Then commence your diagonal effects. Again you obtain the

two, three, or four manifestations of the passage. Stop. Caress. Take off the bridle. Carrots. Stable.

The next day the same work, at the same hand. Do not alter anything. Impress, engrave on the horse's memory, these first foreshadowings of the passage.

During this early work on the passage, stay at the side of the manege and do not try the center. If you do, you will be sorry afterwards, for you will send your horse's haunches to the right or left, instead of having them straight. When the signs of the passage become more marked, before asking for the movement, attack the horse very lightly, with the "delicate touch of the spurs" of Guérinière, or, as I call it, "the honeyed attack." Do this always at the manege walk, and ask the cadence by the calves of the legs only. Obtain three or four steps. Then let go. Begin again. Repeat this, at the utmost, no more than four to six times at each lesson.

At this point, supposing that you have worked properly thus far, I must especially advise that you do not, under any conditions or circumstances, let the horse take the cadence of the passage at its own initiative. Let it do this only when you ask the action by your diagonal effects. Be very sure of this.

When progress begins to be marked, the time has come for a change of hand at each success. Otherwise the diagonal biped that has been nearest the wall will develop more energy or more action. Nothing must be neglected that will make for that

perfect equality of squareness, height, energy, gait, and stride, which is the *sine qua non* of the artistic passage. Do not, moreover, allow your mount to be behind the hand. Accept the passage only when the horse is in contact upon your hand.

Let us now analyze our effects and their consequences.

Baucher writes:

"The passage is the diminutive of the piaffer. In this air, the horse raises its legs as in the trot; but he advances only imperceptibly and at *tempo*.

"For this work, the talent of the cavalier consists, not in making continually an opposition with the bridle each time that the leg acts, but in so well concentrating all the forces at the center, as for the piaffer, that, with the reins loosened, the horse advances only imperceptibly by an excess of action. It is easy to see that there is necessary a complete assemblage, in order that the horse may execute with regularity this brilliant and scientific air of equitation."

I am, with some minor differences, of the same opinion as the grand master; but it must be confessed that it will be very difficult for the student to obtain the passage with only the data, principles, and lessons. Baucher is correct in saying that the reins are to be loose and that the opposition of the hand is not necessary, provided the horse is already at the air. But before the movement is obtained, the opposition of the hand is essential, since it is

by an excess of the effects of our legs that we not only keep the horse in equilibrium, but also gain in weight of action what we lose in forward progress. A locomotive needs a much greater initial force to start the train than to keep it running after it has reached full speed; and in something the same way in the case of the horse, a second force has to be added to that which produces motion forward, in order to make the action higher and slower. But so far as this second force is located outside the total mechanism of the horse's body, it cannot arise except by the opposition of the hand, even though this is as light as can be made. If the horse, in a state of freedom, acts the air spontaneously, it is because the creature understands by its natural instinct how to equilibrize its forces. But this natural instinct becomes paralyzed just as soon as we interfere with our weight or by our lack of tact.

Fillis is clearer and more explicit. He holds, and rightly, that the horse's education should be complete before the passage is attempted. This means that the horse can take and keep the state of assemblage during the execution of every movement in the progression up to that point. The "in hand," the equilibrium, must be perfect, and retained without excitement or fatigue. The horse being then at the manege walk, the rider's legs close as near as possible to the girths. The horse is perfectly calm. The left spur attacks; and immediately after it, the right. The timing of these attacks is

that of the "one, two; one, two; lunge" in fencing. Or, since many riders do not fence, it is very nearly the tick of the second-hand of a watch. At the touch of the left spur, the horse, surprised, raises its left hind leg and moves its body toward the right. Then, at precisely the right instant, comes the right spur to prevent the haunches from swinging to the right, and also to lift the right leg. Then again the left spur with the reversed effect; and so alternately. After four such trials, whether successful or not, stop, calm your horse, and begin again.

The master or the student must impress upon his mind exactly what he desires to obtain and the means by which he is to obtain it. If what has been written above has been studied and understood, it should be clear that the point is to utilize the animal's forces in such wise as to secure height at the expense of progress. Evidently, it will be by the opposition of the hand that the motion forward will be checked and converted into motion up. Thus the propulsive force generated by the attacks of the spurs, which tends to drive the horse forward, is received upon the hand. The fingers close upon the reins just at the instant of the forward push. The result is that the fore leg flexes with the knee up and forward, the foot down. Simultaneously with this, the opposite rear leg comes up, and the horse balances upon a diagonal biped.

Consider, for example, the first manifestation of the passage on the right lateral biped. We have, in

this case, the right front leg and the left hind leg operated by the right diagonal effect; that is to say, by the opposition of the right rein and the attack of the left spur. The right diagonal biped is now up. Then follows the opposition of the left rein and the attack of the right spur, which force the right diagonal biped to return to the ground before the left diagonal biped can be raised. The left diagonal biped now lifts by the same effects as the right and in the same cadence, and we have two steps of the passage. Again, right rein and left spur, and the left diagonal biped returns to the ground as the other lifts. Once more comes the left rein and the right spur, the bipeds reverse, and we have four steps of the passage.

The essential means are, evidently, the attacks of the spurs. At the first touch, the horse is surprised. At the second, the surprise is increased. At the third, the animal becomes worried. At the fourth, he is very near to a revolt, because he does not understand what his rider asks. If now the rider continues the attacks, the horse will be driven into a complete revolt. The spurs will bleed him. He has no idea what it all means. This will be utter brutality, without the slightest chance of success.

Sometimes the animal, all at sea as to what is wanted of him, goes crazy. As Fillis expresses it, "He plays his all, and completely loses his head." In that condition, he may be dangerous, not only at the time, but for the future. One must, therefore,

make ample preparation, take plenty of time, be always moderate, calm, persevering, and patient. If in these four attacks you obtain any sort of small beginning of a leap from one diagonal biped to the other, rest satisfied for the time, and be generous of your recompense and caresses. But, for pity's sake, do not condemn your horse for a fault which is mostly your own. Be sure you are right before every demand; and do not form your opinion too soon.

Finally, be sure that the surface on which the horse practices the passage is properly soft and elastic, lest its feet become sore, to its discouragement. Stay as much as possible near the wall, and keep the horse straight. Change the hand sometimes, but not too often. Let the horse frequently stop and be free. Ask little; but ask well. Be satisfied if the first sign of the desired cadence is from one biped only. So far as possible, work alone in the manege. Catch your pupil's attention and hold it on yourself. In a word, make him enjoy his lessons at the passage. Success depends upon you and upon nobody else. Remember that you cannot buy the accomplishment. You have to create it for yourself.

There are, in addition, several more or less intelligent and progressive mechanical devices for obtaining the passage; but these are not accepted by the strictly scientific equitation.

Baucher and Fillis employed a logical progres-

sion, when they used the Spanish walk and the Spanish trot as a preliminary to the passage. This, moreover, has been the order generally accepted by the equestrian world; since, of course, horses which already have the idea of sustaining and lifting their weight on diagonal bipeds, in cadence and *tempo*, will the more quickly understand the passage, and will require less equestrian tact on the part of the rider. I also, in my youth, like other trainers, approached the passage by way of the Spanish trot. But when, later, I came to look upon the passage as the result of perfect equilibrium, I came also to understand that the passage is impossible until one has obtained, first the assemblage, and then the piaffer, to give the idea of the diagonal action. Then, after the piaffer, comes the passage, with the extension of the fore legs and the flexion of the hocks and haunches.

CHAPTER XXX

THE PASSAGE BACKWARD

THE passage backward follows from the piaffer, and therefore presupposes a horse educated to the perfect state of assemblage and equilibrium.

A horse at the slow piaffer — which is, of course, the only form of the piaffer considered by the scientific equitation — balances itself on the same spot, all four legs flexing at the knees and hocks, but without gaining ground. The center of gravity is, therefore, midway of the body, and exactly under the seat of the rider. Under these conditions, the horse is like a large ball which rests upon a smooth and level surface, with which it is in contact, only at one end of a diameter. Evidently, the slightest force applied at the other end of this diameter will send the ball rolling in the direction of the force. So, in the piaffer, a force applied alternately on the two sides of the center of gravity makes the horse receive its weight alternately on its two diagonal bipeds. As the center of gravity shifts to the right, the left diagonal biped is raised, and *vice versa*.

If, then, under these conditions, the rider leans forward, the horse must move forward, under the operation of the same law. But if, when the horse is lifting his legs in diagonal alternately upon the same spot, the rider's weight is inclined backward, the al-

Figure 38. THE TROT BACKWARDS

Figure 39. GALLOP ON THREE LEGS: RIGHT FORE LEG EXTENDED

Figure 40. GALLOP ON THREE LEGS: LEFT FORE LEG EXTENDED

ternate change from side to side still continuing, then the horse will trot backward. The hand has nothing to do with the action, except to maintain the equilibrium, by means of the fingering.

When once the piaffer is obtained, the backward trot follows without much difficulty; but the movement needs moderation, and should begin with a few steps at first, the number increasing with practice. (Figure 38.)

The speed of the backward trot is not the test of its execution. A three-inch step, taken equally by each diagonal biped, and with the same cadence, *tempo*, and elevation as for the piaffer, is proof of a better equilibrium and a better training, than is any precipitate rush rearward in which the horse avoids the state of equilibrium by moving as it pleases. The air should always seem to be executed without exertion and without compulsion. The horse balances itself with an easy action of the limbs in diagonal, moves backward, returns to the piaffer, changes into the passage, returns to the piaffer, takes the backward trot. The rider's hands are immobile. The position of his body, as it swings like a pendulum into the correct place, is the force which actuates the mechanism.

With this animal mechanism, the backward trot is in perfect accord. The movement is entirely natural, when it is done in equilibrium from the piaffer. But if it is obtained by severity of hand, spurs, or whip, it becomes precisely contrary to the

horse's nature. It is then dangerous to the rider, because the horse, pulled backward by the bridle, may rear and fall.

However, the trot backward cannot properly be considered a gait of the horse. It is serviceable only for perfecting the equilibrium, and for suppling the entire hind hand, most especially the coupling.

THE GALLOP ON THREE LEGS

In the gallop on three legs, the horse uses both hind limbs; but only one in front, and holds the other in the air. Before the movement is asked, the horse must already be able to maintain a complete and permanent equilibrium during the ordinary gallop, to execute the *jambette* at the diagonal effect with great precision and with complete extension of the front leg, and to gallop, not *terre-à-terre*, but very slowly. (Figures 39, 40.)

The movement is asked by decomposing the air into its elements. The horse gallops slowly in assemblage. The rider stops it, and by means of the right snaffle rein and the left spur, asks immediately the *jambette*. After the *jambette*, the horse is allowed to walk. Again the gallop, the stop, and the *jambette* immediately. These three are repeated for whatever time is needed to calm the horse, and to teach it to keep straight when stopped and giving the *jambette*.

When the horse has mastered this exercise, the gallop is asked immediately after the *jambette*,

without the intervening walk. From the gallop, the horse is stopped as before, made to give the *jambette*, and then started again at the gallop. Again, stop, *jambette*, start. Never change the lead; always keep working on the same side.

After a certain time, it always comes about that the horse executes the *jambette* just before it comes to the stop, partly of its own volition, and partly at the effects of the rider's hand and legs. The great point is, then, to seize upon this first single step of the gallop combined with the *jambette* or, in other words, of the gallop on three legs. When you have one — one only — caress with all your heart and send to the stable.

The next day, the same procedure. The horse, as before, does one step of the gallop with the *jambette* held. Once more, caress, dismount, caress again, and to the stable.

After a few days, get two steps of the gallop on three legs; then the next day, four. Continue in this way, but do not ask too much. When the horse does, let us say, five steps at the lead which he has been taught, change the lead and commence from the beginning precisely as before. Do not accept the slightest degree of confusion or mistake. Lean the body forward on the side of the *jambette* and push the horse forward with the legs.

Fillis advocates using the left leg to secure and maintain the *jambette*, and also to continue the gallop. I have, at various times and with different

horses, obtained the *jambette* by holding the right snaffle rein in the right hand, high, and the curb reins low in the left in order to maintain the horse's head near the perpendicular, while my legs confine themselves to the effects needed for the gallop.

It is evident that, to obtain the gallop on three legs, the horse must be morally and physically perfect, or else have been adequately developed by its previous training. Moreover, the rider must himself possess delicate equestrian tact, and have perfect control over his effects. Even then, he will not always be successful, unless he has already educated several horses in the scientific equitation.

The gallop on three legs is a beautiful demonstration of the power of the man's effects over the animal; but it is of use only for this purpose and in the manege. Outside the manege, the air has no value whatever. It is, then, reasonable enough to teach the air to the manege horse, but not to horses that are for other service; and in general I think that the strength of the horse and the tact of the rider are better spent on more useful movements. I even go so far as to say that the gallop on three legs is a source of danger both in the case of a beginner and of a master who is training an animal for some one else to ride. For if the rider of a horse trained to the gallop on three legs is not a thoroughly competent esquire, he will not always use exactly the correct means to obtain the change of lead at the gallop, the change of direction, or the stop. He may, in

that case, start the horse to galloping on three legs — to its great confusion.

Moreover, during the gallop on three legs, the horse is completely on his haunches. The hind legs carry all the weight, advance by very short steps, and always very close to the ground. Therefore, unless the horse is sent forward by the weight of the rider and by a strong effect of legs and spurs coupled with great tact of hand, the creature is exactly in the position to rear high. The gallop on three legs, like the gallop backward, demands a combination of favorable conditions as to both horse and rider that is in practice pretty difficult to find.

Considering, then, the danger to the horse's hocks and to its temper, and the peril to the rider, I cannot feel that the usefulness of the gait at all compensates for the wear and tear on the one or the risk to the other. Fillis has, indeed, executed the air most brilliantly, on the different occasions when he has exhibited his horses. I have performed the feat with several different animals. But, on the whole, the game has not been worth the candle.

THE GALLOP A TEMPO

THIS form of the gallop is a slow canter, in which the lead changes rhythmically from one biped to the other with each completion of a fixed number of steps. For example, the horse gallops ten steps to the right, and then on the eleventh it changes

and gallops ten steps to the left. On the twenty-first step it returns to the right-hand lead; and so on.

The difficulty is for the rider to keep count of the steps, since the air demands for its correct performance that the number shall always be exactly the same. Moreover, at its best, the movement requires the change of lead at every step — one stride with lead to the right, then the change to the left, then one stride with lead to the left, and again the change back to the right, thus continuing indefinitely. Naturally, this demands thorough training for the horse and the highest equestrian tact from the rider.

Both Baucher and Fillis have performed this air with remarkable evenness of rhythm. Fillis, also, once upon a time, laid a heavy wager with certain amateur horsemen, who denied the possibility of the gallop *a tempo*, that he would ride from the Arc de Triomphe to the Place de la Concorde, with a change of lead after every step. The grand master won.

In training a horse for this air, the change of lead should be at first only once in every twenty steps. Afterwards, with the greatest patience and moderation, the number is reduced progressively. The exercise demands great energy from the horse, which must throughout remain perfectly calm. Whatever the number of steps between changes of lead, this must always remain unvaried.

Figure 41. THE GALLOP *TERRE À TERRE*

THE GALLOP BACKWARD

For the gallop backward, the horse must be of perfect conformation, especially in its hind quarters, and must be educated to the point where it can interpret almost imperceptible effects of the rider. Its equilibrium and assemblage must be perfect — the *sine qua non* of this air, since the gait is very precise and the beats equal and uniform — and its strength must be sufficient to sustain without apparent exertion the gallop *terre-à-terre*. (Figure 41.)

In the gallop *terre-à-terre*, as in the piaffer, the horse is like a ball resting on one pole and movable by the slightest force. If, then, the rider's effects, by their lack of equality, timing, fineness, or uniformity, disturb this perfect equilibrium, the gallop *terre-à-terre* becomes impossible. But if the rider's effects are precisely correct, the horse will continue to gallop on the same spot, like the ball resting on a pole. Under these conditions, if the rider's weight shifts on the seat to throw the center of gravity backward of the perpendicular around which the whole mechanism has centered, the horse will be forced to move backward in order to prevent falling.

Meanwhile, of course, the rider, by his effects, must continue to maintain the equilibrium and the gait of the gallop. If either is disturbed ("evaporated" is the expression I use with my pupils), the horse loses either its equilibrium and then its gallop, or else its gallop and then its equilibrium. In either

case, the movement becomes dislocated and impossible.

But the swing of the rider's body should never be a stiff inclination backward of a rigid spine. The weight is, at the beginning, immobile upon the saddle. Then for the change, the rider's spine plays back and forth, flexing at the coupling between the sacrum and the last lumbar vertebra, in time with each beat of the gallop and at the precise instant when the horse's two hind feet are off the ground, and the right fore leg only is bearing the weight — assuming that the backward gallop starts from the gallop *terre-à-terre* on the right lateral biped. This translation of the weight by the flexion of the coupling is to be repeated at each beat of the stride. Meanwhile, the rider's legs have to sustain the equilibrium and to hold the contact of the horse's mouth with the bits.

If, now, the rider, as he swings his weight, merely closes his fingers, without moving his hand, the horse will gallop backward, one step only, but still one step. That obtained, stop everything, yield everything, and caress. When the horse has become calm, forward again at the walk and the *terre-à-terre* at the same hand as before. Be quiet yourself; flex your spine; finger. Another step backward. That is enough for the time being. Dismount; and to the stable. The next day, the same progression.

After a few days, you will be able to obtain

three or four backward steps. When the horse executes these calmly at the hand at which it was first taught, change the lead and repeat the same work at the new hand. Always keep the horse straight and forward. Better work near the wall, as this will aid in keeping the straight position.

If the horse is to be completely educated in the scientific equitation, it is better to teach the gallop backward before the gallop on three legs. Otherwise, the horse may give the gallop on three legs when asked for the gallop *terre-à-terre*. You cannot punish it for a mistake like this, and the result is confusion. But if the horse has thoroughly learned the *terre-à-terre* and the backward gallop, it is a far easier matter to push it forward against the contact, and so change from the *terre-à-terre* to the gallop on three legs, than to restrain it from the gallop on three legs to the gallop *terre-à-terre*.

In beginning either the *terre-à-terre* or the gallop backward, do not accept from the horse the slightest sign of being behind the hand. If you feel this at all, use your legs vigorously and push the animal forward upon the hand. The rider can always detect this tendency to stay behind the hand; and should correct it by giving three minutes of good, energetic promenade trot. For this purpose, I prefer the trot to the gallop, since at the gallop one lateral biped tends to get more work than the other, unless the rider takes pains to change hands. In any case, the gallop does not give so complete

a disposition of the animal's forces as does the trot.

The "in hand" for the gallop backward is between the "upon the hand" and "behind the hand." A horse upon the hand lifts its front legs too high and its hind legs not high enough. But if the rider livens it by the action of his own legs, the horse rears or points forward. If the horse is behind the hand, the fore legs do not lift sufficiently, and the *tempo* of the gallop is not exact. It is, however, not possible to describe completely the sensation which comes to the rider's hand, and only by experience can the rider determine whether he is right or wrong.

In fine, then, perfect equilibrium, *terre-à-terre*, perfect equilibrium, flexion of the rider's coupling, fingering, moderation, and good fortune. The backward gallop proves uncommon suppleness on the part of the horse, together with great strength in the haunches. On the part of the rider, it proves high equestrian tact. Yet the position which the horse takes and the action of its legs are far from graceful, and the utility of the air is debatable. It risks the soundness of the horse's hocks, and it is certainly not worth attempting by a beginner, who has to spoil several horses physically and morally before he attains to the tact and the accuracy of seat essential to the gallop backward without danger.

And yet, for any rider, experience with the gallop

Figure 42. FILLIS AT THE GALLOP BACKWARD

Figure 43. "WHY-NOT" AT THE GALLOP BACKWARD

backward cannot be other than very limited. Very few esquires have ever obtained the movement. I know of only Baucher and Fillis, and even they with only two or three horses each. Moreover, it is absurd for any one to think that any horse can do the backward gallop really well for more than a few strides, because of the great energy demanded.

I give (Figures 42, 43) as illustrations of the movement, Fillis mounted upon "Germinal," and myself upon "Why-Not," in order that the reader may compare the leg action of the two horses at the same gait. "Germinal" is fifteen hands, three inches high: "Why-Not" is sixteen hands, three inches. Although the backward gallop is the last refinement of equilibrium possible to the horse, it is in itself pleasant neither for the horse nor for the spectator. "Why-Not" is the fourth animal from which I have obtained it, not for my own satisfaction, but for the sake of making a picture for this book, in which I set forth nothing that I have not myself done.

And now, finally, at the end of this last chapter on horse gymnastics, I beg the reader to review the illustrations, and to compare the several pictures of "Why-Not" before his training and at the various stages of his development during the course and at the end. These photographs prove amply the muscular improvement accomplished during the horse's education.

CHAPTER XXXI

HANDS WITHOUT LEGS: LEGS WITHOUT HANDS

"Hands without legs, legs without hands," is the name applied to a new principle in equitation enunciated by Baucher only a few years before his death. It resulted in a schism among horsemen, and the new ideas were opposed by many masters and esquires.

I have myself experimented with the new methods upon horses of very different qualities. My own conclusion is that the system is practicable only for a very able horseman training an animal of very superior endowments, both physical and mental. I do not regard the scheme as workable for any rider dealing with a horse of inferior conformation, or for an inexperienced rider dealing with any sort of horse.

For it must be evident that, with a horse of superior conformation, the state of equilibrium is both more easily obtained and more easily kept by the ordinary principles of the reasoned and the scientific equitation, hands and legs being used together for the different movements, than with an inferior animal. Moreover, the less perfectly conformed the animal is, the more difficult is it to maintain the state of equilibrium, even with the aid of hands and legs together.

In other words, with a well-conformed horse, the state of equilibrium is very easy for a practiced rider and very difficult for a novice. With a badly conformed horse, the desired state is difficult for the experienced esquire, and very nearly impossible for the inexperienced, even if they both employ both hands and legs.

It comes about, then, that, whether the horse be well or ill conformed, it has to be trained to the condition of equilibrium by means of both hands and legs. But the horse once trained, though not before, it becomes possible to preserve the state of equilibrium by means of the rider's legs without the coöperation of his hands, or by means of his hands without the coöperation of his legs.

But now arises the question, how does accuracy of seat act upon the center of gravity, which is the immediate sequence of the state of equilibrium? The answer is, that this equilibrium is a unit, and the center of gravity is an element. We obtain this unified condition by the accord of our effects of hands and of legs. But if, when we have obtained this unit condition, we employ more effect of hands or more effect of legs in order to execute a movement, we at once disturb the original unity. Thereupon the equilibrium vacillates between the hands and the legs, and does not remain permanently anywhere.

On the other hand, by means of accuracy of seat, we are able to act upon this unified condition of

equilibrium without destroying it. I am the first to enunciate this principle of the efficiency of accuracy of seat. I know that I shall be the object of criticism; but I consent to accept this. *Beati pauperes spiritu, regnum cœli habent.*

PART IV

THE DEFENSES OF THE HORSE AND THEIR CORRECTION

CHAPTER XXXII

THE DEFENSES OF THE HORSE AND THEIR CORRECTION

EVEN the masters of equitation have to admit that it is very nearly impossible to complete the education of any horse without having the animal show some tendency to lack of obedience, some trace of hesitation, refusal, or revolt. The experienced master senses this condition at its beginning; and without losing any time he discovers the reason for it, and corrects the trouble forthwith. At the early stage, correction is comparatively easy. But when the animal has once formed the habit of rebellion, correction is very difficult, indeed. The result is sometimes a downright fight between rider and horse.

The problem is, therefore, to discover the reason for the horse's defense, and then to remove the cause before the horse gets the idea that disobedience is possible. Experience shows, moreover, that these causes are generally physical. The only mental factor is the fear of injury from some object heard, seen, or smelled. This mental state is to be remedied only by persuasion, patience, and good treatment.

The physical causes of defense are bodily pains and the consequent memory of them. A horse will,

however, very seldom defend itself against the first sensation of an unknown pain, but only if the pain be prolonged or repeated. Furthermore, a horse does not enter immediately into the state of revolt.

At the beginning, it simply hesitates to act and move as it has been doing. Then it tries to stop. Finally, it does stop, and thereupon enters into complete rebellion. The moment when the horse first tries to stop is, of course, the point at which the rider should quell the approaching revolt. The rider, therefore, so to say, takes hold of the horse's legs and forces these to carry the body forward, at any gait, in order that the animal may not feel that its limbs have any possibility of stopping. Whatever the horse may think, the rider's only argument is: "Yes; forward and straight."

Consequent to this first sign of revolt, the refusal to go forward, there is a contraction of the muscles of the spinal column and of the white and yellow cords, the animal is in revolt against the rider and his main controls are lost, and the defenses become possible. These defenses are of four sorts, rearing, kicking, backing, and bolting. All other defenses depend on the possibility of these four primordial ones.

REFUSAL

A HORSE refuses when, because of its moral state, it uses its great physical strength to disobey the com-

mands of its rider. The two wills, the horse's and the man's, are opposed. The man asks. The horse refuses. The point at issue becomes, then, whether the man is to remain master by virtue of his intelligence.

The initial step is to find the reason for the horse's revolt. Has he, first of all, been obedient, and has he already executed the movement asked? If he has, then something new must have occurred to alter the previous state of submission. With a little experience, coupled with a great deal of calm, it is always easy to discover what this something is. We inspect our saddle and girths, the snaffle and bit and throat latch. We consider whether some small departure from the habit already formed by the animal has not provoked the refusal. Have we not repeated the same movement in exaggerated form? Are we correct in our use of our effects? Are these understood by the horse? Is he tired, or confused, or sick, or lame?

No, everything is all right, and as usual. The horse revolts from pure willfulness, because it desires to be master. Very well, I will tell you how to handle this condition.

If the manege or the road is too much crowded with women, children, and beginners, wait patiently and without provoking any further rebellion, until you are alone and free for the little fun that you are going to give your mount.

First make sure that you are entirely in the right

and perfectly calm, with not the least passion or anger. Have a whip brought, but hide it out of the horse's sight, by holding it, handle down and lash up, straight in line with his neck.

Then begin to encourage the horse in a firm, gentle voice. If it obeys, caress it, and let it go on at a walk calmly. Then ask a more complicated movement. If the horse refuses or hesitates, there is a rending sound in the air, followed by a dull one like that of a bullet entering a man's chest. All this is very sharp, sudden, and surprising. The horse turns his head to left and to right, not knowing whence the stroke has come. But the whip has been felt, most certainly; and the horse is vanquished.

If it begins again, the rider is ready, and proceeds as before. Two or three such corrections put the horse back into the state of obedience as he was before his revolt. But if the horse knows, after the refusal, that the rider has the whip ready, it will then obey; and later, when the whip is not at hand, it will again refuse. It is important, therefore, that the horse shall not know that the rider has the whip, nor just what happens to him. Then, if he refuses, the chastisement follows immediately, and there is engraven on his memory the association between the disobedience and the physical pain. But the pain comes as a surprise to the horse, who does not know what caused it nor where the instrument has gone.

There can be no complete education of a horse without an occasional refusal. But the point is to see it coming and to forestall it by equestrian tact, or at the worst not to let the habit grow. Raabe, Baucher, and Fillis have all had real tempests of revolt from their horses. I who write these lines have had some fights, but not many. Those which I have been through make me very sad; because they show me that, with all my studies and with all my long years of experience, I do not know enough to ride without being obliged to punish.

RESISTANCE

RESISTANCE and refusal are very nearly synonymous, but not quite. A horse may refuse to execute certain movements, but will, nevertheless, perform others. Or he may refuse to perform the movement in the way desired by the rider, yet still do it after his own fashion, incorrectly. But when a horse resists, he enters willfully into a state of complete revolt, and tries to free himself from any sort of control. He may carry his rider into a river, and no effort will prevent him. No effects, no means, severe or gentle, will make him obey. Either he will not understand the rider's orders; or else, understanding them, he will not carry them out.

If the horse resists because he does not understand, then the best corrective is patience, perseverance, and persuasion, without punishment. But if the horse understands, yet refuses to obey,

the cause may be bad will, fear, confusion, or fatigue.

When fear is the cause, the terrifying object may be seen, heard, or, very rarely, smelt. The cure is to reëstablish the animal's confidence, by proving to him that the object is inoffensive.

If the horse resists because he is confused, the fault is the rider's own. He should, therefore, distract the horse's mind until the confused images have faded from its memory. Then he should begin again, avoiding his former error.

If fatigue is the cause of the resistance, the remedy is to proceed with moderation, and to ask only such work as is proportionate to the horse's age, strength, and training.

But if the fault is in the horse's evil will, the rider should first make perfectly certain that all his signals meet the same resistance, without the smallest sign of any return to submission. This done, he should punish, with severity, but without passion. Only thus can the horse be made to understand that its will is to be submitted to the rider's control.

Veterinary science is no doubt correct in the opinion that there are defects in the horse's brain, analogous to those in the brain of a man, which cause obstinacy, if not insanity. My own experience, nevertheless, goes to show that the cause of resistances, refusals, and similar difficulties have their basis in ordinary physical defects, which can be cured by moderate and proper education.

CONTRACTION

A HORSE is instinctively timid and anxious, even in a state of freedom; and this nervous tension tends to affect the muscles and to cause these to contract and stiffen beyond their normal tonus.

This contraction is likely to be augmented during the animal's education. Its four senses are very acute, and the unaccustomed objects which surround it keep it chronically alarmed. The harness also, and the contact of the rider, with his various effects, and all the various checks and impediments of the domestic life, tend, until the horse becomes wonted to them, still further to increase its nervous alarm. To relieve this state of contraction is one task of the horseman.

Whether this state of anxiety and contraction is treated properly or improperly determines in large measure the future temper of the mount. The well-disposed animal will always be ready to obey as soon as it understands what the rider wants of it. Moreover, until the horse begins to contract itself, it cannot resist. But this contraction is easily detected by the rider, through his seat, legs, and hand. If the rider is inexperienced, he tries to counteract this while the horse is in motion. The abler rider, on the other hand, immediately stops the horse and relieves the contraction. When this is completely at an end, he once more sends the animal forward, properly supple.

This is Baucher's principle. Fillis advocates destroying the contraction while the horse is still moving. But a rider of Fillis's ability can do this without danger of confusing his mount, since his seat is so secure that he can resist the defenses which follow the contraction without impairing his effects of hand and legs. But the student or the ordinary rider cannot do this. If he attempts it, he endangers the temper of the horse and the soundness of its limbs. Moreover, the horse gets the idea that it can refuse by contracting; and when the rider applies his effects in correction, the horse discovers that it can resist these by bounding. All this it retains in its memory for use whenever it wishes to defend itself against the rider.

Baucher, on the contrary, always starts from the equestrian axiom: The horse's position of suppleness and balance make possible the execution of the movement asked. This position, since it is the foundation of every movement, must be permanent. To permit the animal to conceive the possibility of movement when not occupying this position is to accustom it to the possibility of contractions, refusals, and bounds. But to stop the horse at the first sign of contraction, to restore its suppleness at once, and only then to carry it forward, is to impress upon its memory the impossibility of moving unless supple and balanced. To follow out this principle invariably develops with the progress of the instruction a second nature in the horse, bene-

fits its morals, and economizes the wear and tear of its physical mechanism. My own opinion and practice agree with those of Baucher.

THE HARD-MOUTHED HORSE

THE hard-mouthed horse has insensitive bars; and is, therefore, able to resist the bit. Baucher insists that there is no such thing. Fillis admits its existence, but lays it to the lack of skill of former riders. I, in a way, agree with them both.

Fillis offsets the lack of sensibility by using a severer bit. His method is sound and practical for the man who must ride a hard-mouthed animal, yet has not the time to educate his mount. But the severe bit is only a provisional remedy, since the horse will very soon become accustomed to this also and pull against it as before. For the trainer who can spare the time needed for a real cure, Baucher's idea is the right one, and I am completely of his opinion.

I have already explained that, in natural conformation, there are three sorts of bars. I do not, however, believe that the lack of sensibility of any sort follows directly from its shape. It is, rather, an indirect result of other causes.

Consider, for example, two different horses, ridden by the same trainer, who we will assume is entirely competent. One of these animals is well conformed, with a somewhat heavy neck, and heavy or fleshy bars. The other is badly conformed

and weak, but with a well-proportioned neck and good bars. The first horse, having ample strength to carry its load, is a good deal at its ease. At the beginning of its training, it will pull. But the hand of the rider being fixed, the horse will very soon find that pulling brings no relief to the sensation on the bars. Thereupon, its jaw will more or less relax; and since the rider's fingers now also relax, the horse finds it profitable not to bear against the bit. Meanwhile, the rider does not allow the horse to take any initiative, but pushes it forward at will, by the effects of his legs. Since the horse is well conformed and carries the weight without too much effort, it complies with the rider's wishes without objection.

Turn now to the other horse. Because of its weakness in legs and spine, this animal cannot carry its load without constraint and a general contraction of all its muscles, so that its balance becomes disturbed. It stiffens the muscles of its neck. The contraction spreads from the neck to the lower jaw. The bars are set. The horse pulls against the hand, and is called hard-mouthed. The longer the training continues, the harder-mouthed does it become, up to the time when the gymnastic exercises have developed its strength sufficiently for it to carry its rider and execute its commands with ease and comfort. Then it becomes like the first horse.

I hold — my experience compels me to hold — that the well-bred, well-conformed horse, strong

and sound, very seldom resists the rider. But the case is exactly reversed for the horse that is weak, badly conformed, or unsound. It is for this obvious reason that I insist on the fundamental difference between the training of a horse and its education.

Evidently, then, the treatment of a hard mouth is not a question of using a more or less severe bit.

CARRYING THE HEAD TOO LOW

Porter bas it is called in French, when a horse lets its head drop below the correct position, either because of bad natural conformation, or because of weakness in the neck muscles. Sometimes the head is too large and heavy for the front hand to support. Sometimes the weakness is in the loins. Sometimes the croup is too high in relation to the withers.

HEAD TOO LOW

Where the defect is excessive, correction is very difficult indeed. In milder cases, the imperfection in one part of the body is compensated for by over-development in another; and these the esquire will cure by progressive exercises, especially flexions of the mouth and neck. I especially

recommend the progression: flexions, followed by mobilization of the front and hind hands in place. If this work is done with perseverance and ability, the esquire will demonstrate by his success the truth and value of his art.

This defect occurs very often in horses in the United States. The inbreeding of the native stock has tended to make the loins weak; and since a horse, in order to carry its head high, has to shift some of its weight from the fore to the hind legs, weakness of the loins tends to prevent this and so to make the head hang too low. Moreover, the theory, widely held in America, that the natural way for a horse to eat is off the stable floor as if he were cropping grass, tends to stretch the muscles which hold up the head, and so make the horse heavy upon the hand.

CARRYING THE HEAD TOO HIGH

To *porter la tête au vent* is to pivot the skull at the atlas region, and swing it upward into a horizontal position. The head thus carried, neither the curb bit nor the snaffle bears upon the bars, but merely pulls upon the commissure of the two lips, pressing these against the first molar teeth.

The cause of the fault may be too severe a bit, too short a curb chain, too heavy-handed a rider, or too injudicious and severe punishment, which has produced a moral revolution in the horse and made it try to escape the man's control. In these cases,

the trouble is only occasional; and the rider, correcting himself, will correct his horse.

But if this wrong carriage is often repeated, and

HEAD TOO HIGH

without provocation from the rider, then the cause lies in some defect of conformation, as long and weak loins, or too straight hocks, which are sometimes the beginning of spavin or curb, or else in

some local trouble, such as pain in the kidneys, a sore mouth, or sharp teeth. In the latter cases, removing the cause will at once effect a cure. But for weakness of loins or hocks, the remedy is progressive work with the flexions with mobilization of the hind hand backward.

A standing martingale will, of course, keep the head from being carried too high. But it will not remove the cause.

PULLING AGAINST THE HAND

A HORSE pulls against the hand when it takes the bit as a point of support. It may do this in either of two ways. In one case, it may object to the pressure of the bit on its bars, and may try to free itself of the pain, by extending its neck forward with muscles contracted, taking a point of support, and pulling with all its might. The corrective for this is a milder bit, and flexions of the mouth and neck. I say, mouth and neck, because sometimes the bars are the reason for the pulling, and sometimes the neck, so that either may be the cause and either the effect.

In the other case, the cause is a bad conformation which was not corrected at the beginning of the education when the horse was young. A badly shaped neck, a few saccades of the reins in the hands of an unskillful rider, and the horse has so vivid a remembrance that it bears against the hand to avoid flexing its neck and opening its mouth. Sometimes, too, if the fore legs are weak, the animal

stiffens its neck and pulls against the rider's hand for the sake of supporting limbs in which it has no confidence. Or, again, the weak point is in the loins, or the coupling; and because the region where the fore and hind hands join is not strong enough to permit the horse's supporting himself with the loins, he keeps himself upon the hand by pulling against the bit.

Some authors have maintained that pulling on the hand is the result of bad conformation of the bars. If this were the case, it should always be possible to find a bit of such a form that it will compensate for this defect. I, however, agree with Baucher's opinion that the trouble lies in a general weakness or bad conformation of the body, which makes it difficult for the horse to place itself instinctively, or be placed by the rider, in the correct position of assemblage. Since, then, the horse is wrongly set, it tries to support itself by pulling against the hand.

In every instance, therefore, the proper way to correct the fault is to develop the animal's strength by progressive gymnastics and by good and ample food, meanwhile, freeing the contractions of the mouth and neck by means of flexions, which will not only supple these parts, but will besides develop their strength and conformation. If the seat of the difficulty is in the loins, the coupling, or the hind legs, the proper treatment is through backing and the reversed pirouette, executed as a moderate and

progressive gymnastic until the requisite strength is attained.

BEATING AGAINST THE HAND

NOTHING is more uncomfortable on horseback than a mount which, at the slightest effect of bit or snaffle on its bars, refuses to obey, and to avoid the contact shakes its head in every direction, or, as the French call it, *battre à la main*.

There are several reasons for this defect. Most generally, it is due to some rider's too severe hand on bars that are too sharp, to a bridle wrongly adjusted to the horse's mouth, to too tight a curb chain, or to some previous saccades against sensitive bars. All these result from ignorance on the part of the rider or of the caretaker. They are corrected by the rider's greater experience, better instruction in horsemanship, a change in the bit, or, mechanically, by a standing martingale.

Very often, too, the beating against the hand is the consequence of some defect of conformation, some wound or lameness. The horse's head and neck are like the balancing pole of the rope dancer; and if there is something wrong with the conformation of the backbone or its spine, some trouble with the kidneys, the coupling, or the pelvis, if the muscles of the back have become sore under the saddle, the horse may, in consequence, shake its head. But the cause will be in some derangement of the animal mechanism.

Still a third cause is unsoundness of the hocks, curb, and spavin. For these a veterinarian will have to be consulted. In general, when everything about the horse is all right, it will take the contact when sent against the bit. But if anything is wrong, it will refuse contact and beat against the rider's hand.

CHAMPING THE BIT

THUS Newcastle translates *begayer*, meaning a stammering or stuttering movement of the horse's lips or teeth.

The properly educated horse takes the contact of the bit, and at the contact opens its mouth by contracting the *digastrius* muscle. At the cessation of the contact, the mouth closes again by the action of the *temporalis*. Early in its education, the horse opens and shuts its mouth quickly and at its own will; not calmly and precisely. It lips, stutters, and stammers. One hears easily the sound made by the snaffle, which is first lifted by the tongue and then dropped against the bit. While this is pardonable in a horse at the beginning of its training, it is a serious defect for the more advanced animal, and should be corrected as soon as possible, before the habit becomes fixed. Otherwise, it may become the cause of further refusals of obedience from mouth, neck, or the entire organism.

It is certain that the horse which lips, stutters, or stammers has already developed a mouth more

sensitive than before the training began. The ignorant, therefore, whose number is legion, hearing the noise, think that the flexion of the mouth is complete. This is a mistake. The sound really comes from the mouthpiece of the Liverpool bit sliding on the shaft of the branches.

I object, therefore, to this sort of bit for the saddle horse. The effect on the bars is not sufficiently precise. The shaft, by allowing the mouthpiece to slide on the branches, makes it possible for the cannon to transmit the pressure from the hand from below upward along the bars, and in consequence to press the mucous membrane of the bars against the first molars. When the rider's hand is rigid, the mouthpiece stays pressed against these teeth. When the hand cedes, the mouthpiece drops. At the next effect of the hand, it again slides up. Thus it is the mouthpiece only which responds to the pressure of the hand, not the lower jaw, though this yielding of the lower jaw is the *sine qua non* of the flexions of the mouth and neck.

The horse, properly trained with snaffle and curb, raises its tongue very lightly as it opens its mouth, finds the snaffle with its tongue and lifts this. As the effect of the hand ceases, the tongue returns to its normal position, and the snaffle falls against the mouthpiece of the bit and makes the silvery note so precious to the rider. But with the Liverpool bit, it is the bit itself which gives the sound. The reasoned and the scientific equitation recognize flex-

ions of the neck only as they are dependent upon flexions of the lower jaw.

Some horses, nervous and excitable by nature, sometimes champ their bits because of their own energy and impatience. This is not so much a fault as a proof of energy, which properly directed becomes one of the qualities of a good horse.

STAMMERING

STAMMERING is a contortion of the horse's mouth which occurs when the rider's hand asks the direct flexion. There should be a feeling of square contact before the flexion, which, as the mouth opens, should pass into a sort of honeyed sensation in the rider's fingers. This should be exactly square and equal. If, however, one of the bars does not cede precisely like the other, but holds the contact when the other has yielded completely, the horse is said to stammer. The same word is used, also, when the horse grinds, gnashes, cracks, snaps, or slaps its teeth.

The horse's nervousness, irritability, or impatience is what makes it *casser la noisette;* and the correction is by obtaining the complete direct flexion of the lower jaw. A young horse, at the beginning of its education, is pretty likely to stammer, and must be excused. But the trainer must take care that the stammering does not become a habit, since, when once fixed, it is difficult to cure.

On the other hand, this cracking of the teeth

together has been employed successfully by the author to cure the fault of "making forces," discussed just below, and also to correct the habit of putting the tongue over the bit. In either case, the horse will bite its tongue, and having done this two or three times, will desist forever. Such bites of the tongue are not serious. A little salt or sugar, helped by the saliva, will heal the wound in a day or two.

The corrective of stammering is to complete the progressive work of the flexions. The direct flexion will always reëstablish calm in the general organism.

FAIRE DES FORCES

A HORSE is said to "make forces" when it takes a wrong position of the lower jaw and resists the effects of the rider's hand. This may take the form of shutting the lower jaw against the upper at the effect of the bit, of opening the mouth too wide and keeping it thus, or of carrying the jaw to the right or left at the solicitation of snaffle or bit and holding it there against the effect of the rider's hand.

The fault is generally the result of bad conformation of the hind legs or of weakness of the loins. In a well-conformed animal, it arises from incorrect, too severe, or badly adjusted bits, from roughness of hand and irregular gaits, and sometimes from too sharp teeth on one side of the mouth. In this latter case, the only remedy is to have the teeth filed by a dentist.

If the trouble comes from weakness of the loins, the corrective is progressive exercise of the loin or *ilio-spinalis* muscles by such movements as reversed pirouettes, backing, and standing; but these are not always effective.

A horse which "makes forces" is not agreeable to ride until it is cured of the failing, because of the uncertainty of control, since it may, at the slightest occasion for bad will or fear of objects, resist and refuse to obey the rider's effects. Very generally, too, the fault is accompanied by some other difficulty with the mouth, and the horse lolls with its tongue, puts its tongue over the bit, or pulls its tongue back behind the bit and carries it rolled into a ball.

Various bits have been invented to remedy these tricks. Fillis recommends a bit with a palette to come in the middle of the free portion of the tongue. In a class for ladies' saddle horses at the National Horse Show in New York City, among twenty-five horses, I found five with rings in their mouths, fastened with strings to the bits. The tongue passed through the ring, and of course had to stay there.

I have, myself, had a number of horses which "made forces"; and I have tried every sort of bit. No bit has been a complete corrective. Yet I have cured every case but one, a thoroughbred steeplechaser named "Minstrel," a very powerful animal, whose bars were too sharp, and so near together that there was insufficient room for the tongue.

For this animal, I tried a straight bit, and one covered with linen. I also tried using the snaffle only. But nothing worked. The other horses I continued to ride, after giving them flexions on foot. As soon as they "made forces," I stopped them and flexed again.

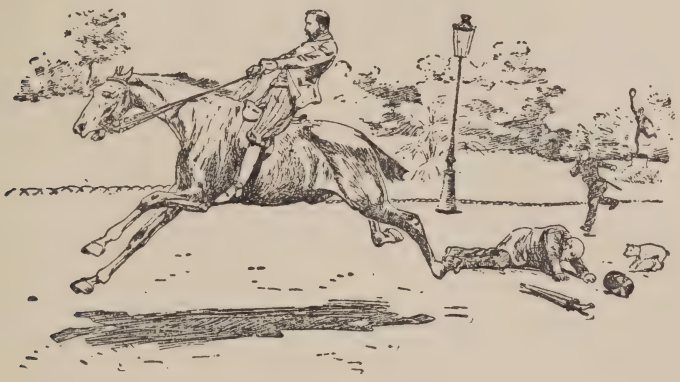
One horse was so stubborn that I was in despair, until a gentleman came to see me, riding a horse that was "cracking nuts." Hearing the horse clack its teeth against one another, gave me the idea of training my subject to do the same. Thereafter, it stopped "making forces." But, unfortunately, *cassant la noisette* is quite an annoyance, since the horse may bite its tongue and rear. Nevertheless, the fact remains that if a horse "cracks the nut" it cannot "make forces."

However, in any ordinary case, my advice is to remedy the fault of the mouth by flexions of the mouth and neck, at first standing still, and afterwards at the walk.

BOLTING AND RUNNING AWAY

WHEN the forward drive which the horse's hind legs give to the entire body, instead of being directed by the rider's legs, is under the control of the horse's will, it is possible for the animal, impelled by fear, to bolt, and to run at full speed against walls or other riders, into fire or trains, over precipices. All sensibility to the rider's effects has disappeared, and only fatigue can reëstablish control.

It is, therefore, very nearly impossible to stop a horse when once the bolt is under way, though it is comparatively easy to prevent his entrance into the state, except where the habit is already formed as the consequence of defective eyesight or the memory of pains from over-hard whippings or the



RUNNING AWAY

too severe use of sharp spurs. One should, then, endeavor to find the reason for the bolting, and remove this. This done, the fault will sometimes disappear.

When a horse is bolting, its vertebral column from atlas to coupling becomes stiff. The neck is rigid. The bit is without effect. It is sometimes possible, under these conditions, to release the contraction of the neck by lifting the horse's head, but not so high that it cannot see out in front, and sawing with the snaffle rein. But if the rider feels that

every sort of control is lost, the only thing for him to do is to be very calm, make sure of his seat, and separating the reins in his two hands, try to direct the animal in its mad speed. When, if it be possible, the horse has run enough to tire itself, the rider should try to quiet it by his voice, and by sawing with the reins, to make it take the trot and finally the walk. To stop the horse completely is very difficult, the impulsion being still powerful.

If a rider, himself well mounted, has occasion to stop a bolting horse, the best method is to place himself at the left side of the line on which the animal seems to be running, and to gallop at a good speed in the same direction. As the bolting horse comes alongside, the rescuer increases his speed, and seizing, with his right hand, the reins of the frightened creature close up to the mouth, gallops for some steps beside it. Having next tested his control over his own mount, he tries, by quick jerks of his right hand, to reduce the run, first to a gallop, then to a trot, and finally to a walk, while with his left hand he checks correspondingly his own horse. But, of course, any such performance as this involves circumstances and conditions which it is impossible to anticipate in print.

In order to correct a horse that has bolted several times, put it in a large field of newly ploughed ground or on a long sandy beach, and run it till it is tired. Then make it run again. But though this device will work, my counsel is, find the reason for

the bolting and remove that. The cure will then go deeper and be more permanent.

Running away is not quite the same thing as bolting. It is rather the result of the habit of getting out of control. The horse bolts because of too severe correction, defective eyesight, too tight a curb chain, too severe jerks upon the mouth, sore bars, a sore tooth, a bit set too high and cutting the commissure of the lips, the continual pricking of the spurs of a rider without seat. The bolt is repeated, until by and by habit and memory suggest the possibility of resisting in the same way all demands of the rider which are unpleasant to the horse. The horse thereupon becomes a runaway. The French express this desperate action by *prend le mors aux dents*, *s'emporter*, and *s'emballer*.

Naturally, the cure for running away is to discover the cause of the original bolting from which it developed, and to remove that. The scientific equitation does not recognize the utility of martingales and other straps. It depends solely on progressive education, holding that, after a horse is properly suppled, it is impossible for it to run away without giving to its rider the opportunity to prevent the first sign of revolt, of which the running away is the sequel.

SAWING WITH THE SNAFFLE

It sometimes happens that a young horse not completely trained, or an older animal surprised by a

sudden sight or sound, or either when it suffers from lack of exercise, will escape contact with the bit; and so, getting out of control, will travel faster than the rider desires, and will refuse to moderate its speed at the effects of the bit. Usually in such a case, the animal carries its head very low; and if it flexes its neck, does this in such wise as to bring the chin near the chest, so that the more the rider pulls against the bit, the more is the chin drawn against the chest. This position prevents the action of the bit, and the horse goes faster and faster.

The only corrective is to saw with the snaffle. The rider, without losing any time, abandons the reins of the bit, and takes a snaffle rein in each hand, holding it quite short. He then raises his hands, and pulls forcibly, first on one rein and then on the other, until the horse comes once more under his control.

The reason is simple. With its head down and its neck contracted, the animal has the *point d'appui* which makes resistance possible. The rider, by raising the head, releases the contraction of the neck, and thus destroys the center of refusal. The feeling on the horse's mouth of the mild effect of the snaffle, rapidly repeated, keeps the horse from taking the position of resistance.

It is an equestrian axiom that a horse, in order to resist its rider, must begin by contracting unduly the neck muscles which are the locomotors of the fore hand. The only way to free this contraction is

by sawing with the snaffle. But if the contraction of the neck continues, the horse will escape from the rider's control, since, in this condition, his effects are not sufficiently powerful to decide its conduct.

HEAD TO HAUNCH

Tête à queue, as the French call it, is a defense of the horse in which the animal bends its spine side-

THE HEAD TO CROUP

wise to form a half-circle of its body, and thus bring the two ends near together. A horse sometimes takes this position when stung on a hind leg by a fly. It bends its neck to reach the insect with its teeth, and at the same time, to make this easier and to shorten the distance, it turns its haunches as far as possible to the same side. This, however, is only occasional, and is not in any wise a defense.

As a defense, the horse turns "head to haunches" very suddenly; and is likely, therefore, to mix its legs, and to fall to the side opposite to that to which it turns. In a manege, this need not be especially dangerous. But out of doors on a hard road, the result may be a serious injury both to rider and horse.

Evidently, there is some reason for this sudden movement of the horse; and it is for the rider to discover this and remedy it. Since, then, each individual animal has one side or the other to which the bend is always made, the corrective is to hold the reins in both hands, with the pair on the side away from the bend held shorter than the other. Thus, if the horse swings head to haunches on the left, the right reins are shortened and the rider's right leg is brought nearer to the horse's flank. In this position, the rider does not wait for the horse to begin its defense. He prevents it at the start by flexing sharply the horse's neck to the right and downward, while with his right leg he pushes the haunches to the left. This action turns the horse to the right, in the opposite direction to its defense. In making this turn to the right, the rider should execute only the ordinary change of direction. He should not have the horse perform "head and haunches to the right."

If this work is being done in a manege, the horse should always be at the hand opposite to the side toward which it makes the defense. If, for example, as in the case above, the bend is toward the left, the

riding is done with the right side toward the center of the ring. On road, street, bridle path, or track, unless one keeps in the middle, the horse may go on to the sidewalk and injure a passer-by. But by riding at the middle of the road, one keeps himself clear of other riders and of carriages which might hurt him in case of a fall.

I have myself tried various correctives for head to haunches. None of them have satisfied me. It seems to me that the trouble is the result of rheumatic pains in the side of the back, which appear from time to time, suddenly. I have observed that certain horses which have this failing will go straight for days, sometimes for months, and then once more, without the slightest provocation, bend *tête à queue.* Possibly we are dealing here with the same affection which the doctors call *coup de fouet,* which is a sudden attack of lumbago or something similar. Evidently, in such a case, a veterinary's care is indicated.

Where head to haunches is a willful defense, it is best to call in the services of a professional rider, letting him know to which side the turn is made. Some masters advocate using a standing short rein, fastened at the stirrup strap, on the side opposite to the twist. I am against such a proceeding; because, although the fixed rein will undoubtedly prevent the defense, it will at the same time hinder the horse from turning its head to the opposite side for the purpose of seeing and avoiding obstacles in the

road. The sure result is a fall or other accident. When I am correcting any defense of a horse, I like to be as free as possible and alone with the animal.

RESTIVENESS

A RESTIVE horse refuses obedience, but under certain conditions and circumstances. The disorder is, then, moral; but it is not permanent, nor does it occur always for the same reason.

A restive horse will, for example, carry its rider most obediently for a certain distance. And then, suddenly, without provocation, will insist on going down some other road. It will persist in turning to one side, and no effect of rein or spurs will make it turn to the other. Or, again, the horse will come to a stop with its head in a corner of the manege, and no power will make it budge. Yet at another time the horse will pass the spot where it was restive before without a sign of rebellion. In a word, the horse's restiveness is intermittent, so that very many horsemen attribute the condition to a state of the horse's own will.

But while it is entirely reasonable to suppose that restiveness in a horse is predominantly a matter of will, this volitional state must itself have had a beginning at some point where the possibility of disobeying first took root and started to grow into a habit.

Consider the case of a young horse, without training, which knows nothing of the meaning of

the effects of its rider's hands and legs. The trainer, at the beginning of the horse's education, asks a movement perfectly easy to perform. The horse fails to understand what is wanted of him,

PUNISHING A RESTIVE HORSE

refuses, and is brutally whipped. But the whipping does not make him understand anything that he did not know before. So he again refuses; and is again whipped. Thereupon the trainer passes to another movement. But the punishment is engraved on the animal's memory. What is more,

this procedure has taught the horse that it can refuse or obey as it pleases. Farther along in its education, the horse again becomes restive. The rider follows the same course as before; and getting no better result than before, again passes over the movement and takes up another. The horse is confirmed in the idea that it can obey or not obey as it chooses. Do we not find exactly the same restiveness in a spoiled child? In the same way, the habit of refusal spoils the horse. It becomes capricious. When it chooses, it obeys. When it does not choose, it disobeys. In short, it is restive.

Punishment, in such a case, will have no result. When the horse feels that the man who happens to be riding him is strong enough to fight and compel obedience, the horse will obey. But as soon as another rider is on its back, the horse will again try what it can do.

I have had a great many horses sent me to be cured of restiveness, and I have never been unsuccessful. My only method is to start the training all over again from the beginning, as if the animal were absolutely green. Very soon, I reach the place where the education has been slighted. I insist on the neglected movement; and confirm the habit of obedience to the special effects which secure this, until the animal has learned to obey without fear of punishment. By degrees, he learns that he is better off to obey me than to be restive and be punished.

The horse's contrariness is now removed. But how did it arise in the first place? By the education at the hands of the first trainer, who allowed the horse to refuse to execute a movement or submit to an effect which it did not understand. If the trainer had insisted patiently and gently on the horse's learning that troublesome effect, he would, at the very beginning, have disposed the horse's will in his favor, and instilled the habit of obedience. But by punishing the horse for not understanding some effect, the trainer has impressed upon its will and memory the possibility of successful revolt. The animal knows that it has had the best of the man.

The error really lies in the haste with which masters and public are trying to complete the education of a horse. One who takes a reasonable time and follows without hurrying the sequence of the training should never have occasion to induce any restiveness. Either the horse knows or does not know what the man's effects indicate. If it knows and refuses, it must be punished. But if it does not know, it is to be taught. To educate the horse to understand the rider's effects is to make it superior to other horses and more intelligent, and is the surest means toward success.

BOUNDING

A BOUNDING horse springs straight up in the air from all four legs, and comes down again on the

same spot. The movement, therefore, cannot be executed if the horse is already in motion.

A jump of this sort is especially disconcerting to an inexperienced rider, since, like any movement which does not carry the animal forward, it tends to a considerable derangement of the seat. Oftentimes, the bound arises from nothing more than exuberance of life or lack of exercise; and in this case, plenty of hard work will correct the fault. Often, on the other hand, the horse bounds in order to free himself from the rider's weight. In this case, the bounding becomes a defense.

The rider should, then, study the position taken by the horse's head and neck shortly before and during the bound. He will observe that the mouth has closed and is rigid, and that the neck is stretched forward and stiff. The bound itself involves a contraction of the muscles which lie along the spine, and a projection upward of the body by the action of the hocks and knees.

As soon, therefore, as the rider feels by his seat that the horse's spine is becoming rigid, he should separate the two snaffle reins, and then, by raising one hand after the other alternately, quite high, he should lift the horse's head, and with it the neck. The head and neck, being up, cannot be contracted preliminary to the bound. The rider should then turn the horse sharply, let us say to the right, by the tension of the right rein and the effect of his right leg; and immediately afterwards, to the left

by the reversed effects. By doing this several times alternately, he will make it impossible for the horse to place all four feet at the same time on the ground. The horse is, therefore, unable to bound; and after he has tried several times and failed, he will cease to try.

THE BUCK-JUMP

A YOUNG horse, not yet wonted to the pressure of the girths and the weight of the rider on its back, is likely to stiffen its spine, and at the same time to rear slightly with its front legs. In this position, the hind legs tend to send the body forward. But since the spine is everywhere rigid, the two hind legs cannot function independently. Both, therefore, act together to throw the croup violently up. Thus the movement becomes a sort of kick, in which, however, the hind legs do not extend backward. Following this, the front legs return to the ground reaching forward. The hind legs follow; and immediately the buck-jump is repeated. Meanwhile, the head is held low and the neck stiff, in order to resist the effect of the rider's hand; since, if the head were up

THE BUCK-JUMP

and the mouth and neck relaxed, the spine also would be freed, and the buck-jump could not be executed.

Some horses, already trained, when they have their girths too tight will buck-jump. But, in general, the movement is consequent to some provocation, and employed by the horse as a defense. Not infrequently, a horse, having once freed its back from its rider's weight, will continue to practice this defense until it develops the habit.

Whether the buck-jump be sporadic or the result of a fixed habit, the reason is always the same — the horse refuses to go forward. It makes no difference what the reason is, whether the girths are too tight or whether the weight of the rider is greater than that to which the horse is accustomed, the result is the same.

The remedy is to see that the girths are not too tight, and to accustom the horse to the rider's weight. But when the horse begins the defense, the rider should at once lift its head as high as possible. In this position the horse can raise its front legs, but not its hind ones, which remain on the ground. If, then, the rider is sufficiently sure of himself, he should make the horse back. This will prevent the rigidity of the coupling, and the hind legs will act in alternation. The result will be the walk or the trot, but not the buck-jump.

The effect of too tight a girth is to inhibit the action of the great pectoral muscles, so that these do

not draw the hind legs forward as the front legs are extended. From these, the stiffness is communicated to the *ilio-spinalis*, which, stimulated by the weight of the rider, contracts and paralyzes the articulation of the coupling. This, in its turn, prevents the separate action of the hind legs. These, as a result, act together to raise the hind hand, extended and stiff.

The remedy, therefore, is to keep the horse moving his legs alternately, and so moving forward. If all four limbs are acting to send the body forward, all rearing and kicking are impossible. But if the animal is allowed to stop, then any action of its legs is open to it, and it can lie down as easily as it can buck-jump.

THE HORSE WHICH BURIES ITSELF

SOME horses are by nature restive and violent, so that they do not respond to kindness until after they have been tamed by energetic treatment. This native excess of bad temper leads such animals to try every means of escape from the rider's domination; and before they finally submit, they sometimes, as a last effort, set their four limbs immovably so that no sort of persuasion can make them stir. *S'enterrer* and *s'immobiliser* are names for this action, which I have translated as "bury itself."

When a horse thus buries itself, the only corrective is to apply the whip on the flanks during the

time when the horse is set. Do not employ legs or spurs, since the effect of these is to make some horses lie down in a sort of frenzy. Avoid also any caressing of the animal during the time when it is rigid. If both rider and horse are in a safe situation, and if the failing is only occasional and not a formed habit, remain perfectly calm, and keep the animal, or, more correctly, permit him to be, completely free. Very soon he will become exhausted by the tension, will relax, and move forward. The powerful spasm of the horse's nerves and muscles is much like that of a man made temporarily insane by excess of alcohol. If, then, the horse is left to itself, very soon it is sufficiently punished, and as soon as its strength gives out, it will relax.

When, however, a horse continues to repeat the act of burying itself, it is better to consult a veterinarian and have a careful examination of the heart. The horse's heart is susceptible to disease, trouble, failure; and the rider should know the situation before he exposes himself to accident from some abnormal condition.

PREPARING FOR DEFENSE

PREPARING for defense is the action which a horse takes as a preliminary to entering upon the state of non-submission, revolt, and refusal.

This first act of rebellion is very easy to detect. The animal escapes the contact of the bit. It keeps its mouth closed, holds its neck rigid and usually

extends it forward, while by carrying the head low, it neutralizes the effects of the bridle. The hind legs are not together, but one of them is too much under the body while the other is extended too far to the rear and does not support its share of the weight. Commonly, the horse stops of its own will, and refuses to advance or to change its position at the ordinary effects. The rider feels as if he were mounted upon an unsteady wooden horse.

Sometimes this condition of fear or stupor is the result of defective eyesight, and is brought about by the sensation of some object the effect of which has spread from the brain to the entire body. The sound of a locomotive or of an automobile sometimes, though not often, has a like effect. In the first instance, the correction is through the treatment of the horse's eyes by a veterinary. In the second, the procedure is to accustom the horse to the noise and to build up its confidence in its rider.

But where the state is the result of an evil will and the desire to refuse obedience, the corrective is, without loss of time, to separate the reins into the two hands, and with right hand and right leg, or *vice versa*, force the horse to turn round and round in a very small circle.

The horse, thereupon, from fear of falling, will move its legs and relax all its body. After this treatment, it will remember the result of its rebellion and will very seldom repeat the offense.

L'ACCULER

L'acculer has no English equivalent. It means the position taken by the horse's rear limbs when the animal, refusing to go forward at the effects of the rider's legs, throws too much of the weight on its hind feet.

A RESTIVE HORSE IN THE INCORRECT POSITION CALLED "ACCULER"

This position of the horse is the basis of all its defenses. For when the center of gravity is too far back, it then becomes possible for the animal to rear up, to kick, or to plant itself immovably on its fore legs and refuse to advance. It is easy to understand that, with the center of gravity too far back, the hind legs are so overloaded with the weight that they are no longer ready for the impulsion forward. In order to prevent the horse from taking this position, the rider's legs should always, and in all circumstances, in sending the horse forward, act in advance of his hands. Moreover, this action of the rider's legs should continue from the time when the forward movement is first obtained, until the horse is perfectly light in hand and all contractions have disappeared. By obtaining this lightness, the rider makes sure that his mount is not *acculé*. But a

horse that advances at the effects of the rider's legs, giving to the hand of the rider the contact upon the bit, is never *acculé*.

REARING

A HORSE, in rearing, shifts the entire weight to the hind hand, brings its hind legs forward under its body, and raises its fore hand very high in the air, either bending its fore legs at the knees or extending them very high and pawing the air. Altogether it is the most dangerous defense of the horse when habitual, and bad enough when only sporadic. In either case, the animal becomes quite impossible for a woman rider.

REARING

Rearing may be the result of several causes. The principal ones are: sudden fear; bad eyesight; weakness in the hind legs or loins; pains within the abdomen or in the region of the sacrum, pelvis, or pubis; too tight a curb chain; a too severe hand; saccades against the bars; abuse of means and effects; the physical confusion which results from too rapid progress with the training. Sometimes, too, especially at certain ages, the teeth are growing or are being lost, and the gums are sore. Besides

these, there are the moral causes, defects of temper, violence, nervousness, a restive nature.

If the rearing is the result of sore gums or defective eyesight or of weakness in the muscles of the loins, the remedy is treatment of the eyes and mouth by a veterinarian or progressive education at the hands of a trainer to develop the weak spot. If the bars are the cause, the corrective is a bit with a large port and small branches, with flexions of the mouth and neck, done first on foot and then mounted. For such other causes as saccades, improper bitting, a heavy hand, the remedy is to let the animal lose the memory of the pains inflicted on him, and thereafter to use hands and legs with more moderation.

But the rider should always remember that, whether the cause be physical or moral, the horse is able to rear only if the alternate action of the hind legs is arrested for a sufficient time for the animal to bring both hind feet forward under the body. These, therefore, acting as supports, are able to bear the entire weight. A horse cannot rear on one hind leg alone. But if one hind foot is brought forward and held there until the other comes forward beside it, then the rearing becomes possible.

Consequently, the best preventive against rearing is not to allow either hind foot to remain in the forward position, but to keep them both continually in motion, from the moment when the rider feels the first tendency to stop. But when the rider

feels that the effects of his legs, used together or separately, are not going to prevent the horse from stopping, he should, as quickly as possible, take his feet from the stirrups, lean his body forward and to one side close to the horse's mane, and loosen the reins. In this position, if the horse has not yet commenced to rear, it is still possible to carry it forward, or at least to keep the hind legs moving. But after the horse is fairly in the air, it is dangerous for the rider to employ both legs together. Nevertheless, he may be able, by using one of his legs after the other, to force the horse to bring its fore feet back to the ground. If, however, the rider feels that the horse, not merely rearing, but already reared, is likely to fall backward, he should rest one hand on the pommel of the saddle, pass one of his legs over the horse's croup, and helping himself with his hand, should slip to the ground, alighting upright on his feet, always of course at the side of the animal, never behind.

The various tricks of spurring, whipping, breaking a bottle of water on the horse's occiput between the ears, are not practicable, although advocated by certain masters.

Rearing is dangerous only if the horse actually does fall backward. But although the horse may, for various different reasons, be willing to rear as a defense or for simple restiveness, it will not voluntarily fall. If, then, the horse does topple over, this is always because it has not the strength to carry

its weight aloft on its hind legs. Since the best remedy is to carry the horse forward, it is correct in doing this to use legs, spurs, and whip. But these are not a corrective after the horse has already reared.

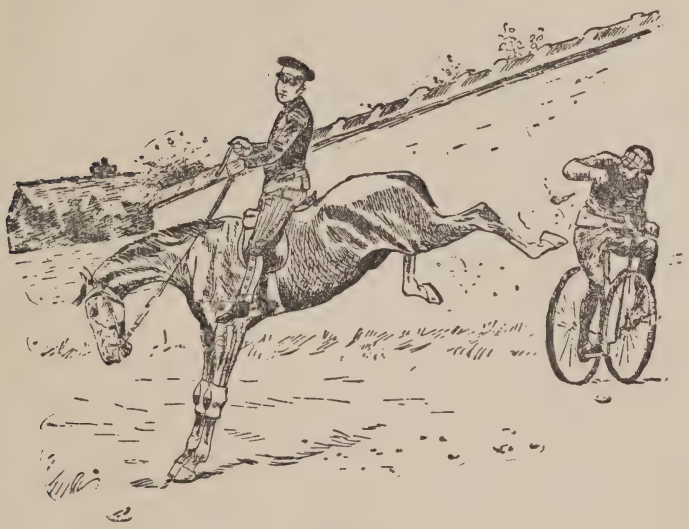
A horse which takes frankly the contact of the bit will, if the rider's hand is intelligent, very seldom try to rear. But, naturally, this contact cannot be obtained without the effects of the rider's legs to give the impulse forward. If, then, the rider's legs are able to send the horse forward, so long as the horse is under the control of their effects it cannot stop and cannot attempt to rear.

KICKING

In executing the kick, the horse stops its forward motion, plants its fore legs firmly on the ground, and using these as a point of support, sends both its hind legs backward and up. This true kick should not be confused with the kick with one hind leg only, which is called in French *ruade.* In the *ruade,* the horse is trying to reach some object with the purpose of damaging it. A kick out with both feet may, of course, injure anything that is near enough to be touched; but it is seldom that a horse of good temper will actually try to hit a man in this way. This does not, however, hold for another horse; so that, if one animal approaches too near the hind quarters of another, the second is likely to deliver either a kick in the proper sense or a *ruade.* This is

instinctive, and is the animal's method of protecting itself from other creatures.

But although the kick is considered a defense of the horse, and indeed is so when it involves the



KICKING

refusal to move forward, it is not in the least dangerous. For a rider with an accurate seat, it is like a wave to a sailboat. It does, however, sometimes make trouble for young riders, if they let the horse repeat the kick too often, until it becomes a habit, called forth by the slightest annoyance or provocation. In this case, it does become a defense.

We here are concerned with the horse which kicks when mounted, and uses this action to resist our means of control. This may result from weakness,

or from exuberance of energy, or from the stings of bees and the bites of green flies.

If, in summer and fall, a horse kicks when annoyed by insects, the best remedy is a switch of horsehair carried in place of a whip. If it is weak in the loins, time and progressive exercise will give it strength. Then, after the horse has become strong, the fault can be corrected. But if the horse kicks because it does not understand the meaning of our legs and spurs, it has to be taught. When it understands, it will no longer kick. Where kicking is the consequence of too much exuberance of life, a good trot or gallop upon a field, repeated with wisdom and moderation, will work a cure.

In any case, however, the best immediate remedy is to keep the fore legs in motion. Unless the fore legs stop, they cannot receive the entire weight, and the hind feet must remain on the ground to act as supports. Moreover, since, in order to kick, the horse has not only to put all its weight on its fore legs, but in addition must drop its head very low and near its fore feet, raising the head high is also a corrective. There is, besides, a shifting forward of the center of gravity as the weight is thrown on to the fore legs, and the head and neck go forward and down. If, therefore, as the rider promptly lifts the horse's head by means of the snaffle, he also leans far back in his saddle, he will put a greater load on the croup, and thus force the hind legs to continue their support.

It often happens, however, that a horse, while not actually kicking, is, as the French say, *croupioner*, an expression which, though not correct French, is the usual word among horsemen.

In this state, at the least touch of legs, spurs, or whip, or even at the approach of another horse, the animal checks the action of its fore legs, flexes its coupling downward, lifts its croup with both hind legs, and makes ready to shoot out its feet behind.

The condition affects some mares at certain seasons of the year, on account of a too great sensibility of the muscles of the loins and more or less of the kidneys. It may occur in any animal from the memory of soreness occasioned by a badly adjusted saddle, or by too heavy a weight, which has overworked the loin muscles. In a great many instances, however, the annoying habit results from nothing more than the inexperience of the rider, who has employed his spurs without understanding their proper use, and because of the instability of his seat and his want of control over his legs, is always tickling his horse's flanks. Or the trouble may arise simply from improper attacks of the spurs, made too early in the training or without accuracy and decision.

The horse which is *croupioner*, though annoying enough, is not dangerous except to riders who come too near. He is, however, undecided and unwilling to carry himself forward strongly. Mares are

often cured under a veterinarian's advice. For both horses and mares, where the trouble arises from proper accuracy and decision in the attacks, these should be repeated and carried through. But if the horse has simply been provoked by spurs used without reason, the cure is for the rider either to sit still in his saddle, or else to take off the spurs which have become a razor in the hands of a monkey. Some good exercising at an energetic walk, trot, and gallop will also help to make the horse go forward more determinedly.

JUMPING TO ONE SIDE

"To jump to one side" seems to be the only possible translation into English of *écart*, which the Duke of Newcastle uses for the action of a horse which makes a sidewise leap away from an object which it fears.

The Duke advises, in dealing with an animal which acts in this way, that the rider shall be always attentive, never neglecting the accuracy and correctness of his seat, so as not to be caught by any movement, however sudden and unexpected. This grand master recommends gentleness at first, letting the horse come near the object, see, smell, and touch it. But if, after the horse has done this, it again jumps away from the same object, then he recommends punishing the horse so severely that the memory of the pain shall be afterwards stronger than the fear; and he quotes Hippocrates, "To

destroy one pain, it is rational to inflict another more severe."

It is, nevertheless, to be noted that the same grand master, after setting forth this theory, goes on to say that his own experience proves that, after a horse has been forced by severe correction to approach the particular object which was the cause of the initial fear, it will shortly commit the same *écart* for another object. This, in turn, having been corrected by the same procedure, the horse finds, in still another object, the reason for still another *écart;* and so on for any number without limit. The Duke's theory is interesting and his experience practical. But as instruction for other riders, he leaves a good deal to be desired.

For the fact is, a young horse, not yet sufficiently educated, may, from mere gayety and exuberance, be surprised by the sight of some object, which, though quite harmless, is not familiar. The animal, therefore, fearing physical pain, at once jumps aside. It is a simple matter for a rider to accustom his horse to any particular object; and then to observe whether the *écart* occurs with one object only, or is produced by several objects of different appearance. If the trouble is simply youth and a too exuberant life, the rational corrective is to have patience, to inspire confidence in the horse, and in the meantime to increase the amount of exercise. But if the horse commits the fault for different objects, and for objects which it has before passed without shy-

ing, then the true remedy is to call in an oculist and have him examine carefully the horse's eyes. If the eyesight is at fault, veterinary science will effect the cure, if any cure is possible. Otherwise, nothing can be done. Such an animal can still be used by a young and firm-seated rider who will enjoy, more or less, the eccentricities of his mount. But it is no horse for a timid person, still less for a woman.

APPENDIX

REPORT OF A COMMISSION OF THREE OFFICERS OF THE UNITED STATES ARMY ON THE DE BUSSIGNY SYSTEM

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REPORT OF A COMMISSION OF THREE OFFICERS OF THE UNITED STATES ARMY ON THE DE BUSSIGNY SYSTEM

[Copy of 1705 B. W. D. 1888]

Proceedings of the Board of Officers convened at Boston, Massachusetts, by virtue of the following order.

Special Orders
No. 44.

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
WASHINGTON, *February* 24, 1888.

Extract.

13. A Board of Officers, to consist of
Capt. John R. Brinckle, 5th Artillery,
Capt. Henry W. Lawton, 4th Cavalry,
Capt. George S. Anderson, 6th Cavalry,
will convene at Boston, Massachusetts, on March 5, 1888, for the purpose of examining into and reporting upon Mr. de Bussigny's method of horse training, treatment, and management.

The report of the Board will be forwarded to the Adjutant-General of the Army for the Lieutenant-General.

On the completion of their duties, the members of the Board will return to their proper stations.

The travel enjoined is necessary for the public service.

By command of Lieutenant-General Sheridan:

R. C. DRUM,
Adjutant-General.

BOSTON, MASS., *March 13th*, 1888.

The members of the Board assembled at Young's Hotel at about 10 A.M. on March 5th, and proceeded to the riding-

academy of Mr. Henry L. de Bussigny, . . . and asked him for both oral and practical demonstration of his methods.

Owing to the presence of Mr. de Bussigny's riding-classes, the Board could not get more than two or three hours per day of his time; and on Saturday, the 10th, he was too much occupied to give us any session. The Board has held meetings of three hours each day but that Saturday to this date.

Owing to the very limited knowledge of English of Mr. de Bussigny, and the difficulty with which he expressed himself, the members of the Board were troubled to understand him. . . . He presented papers to the Board, which satisfied the members that he had been a lieutenant of French cavalry. He also claims (and the Board believes him) to be a pupil of Baucher and Raabe, and to have been a close student of horsemanship for over forty years.

He is certainly a most able horseman.

At his own suggestion, he explained his system by answers to the following questions:

1st question. Who is the founder of the system?

A. It was founded by myself after a careful study of all the books published on equestrianism, and after over forty years' practical work in the field. It was eclectic and thoroughly practical. He took as types the systems of Baucher and Count d'Aure. The former, he explained, had a good system for the training of circus horses, but it was too elaborate and thoroughly unfitted for the military service.

The latter based his system on a severe military discipline, but evolved it from a very limited experience. A thorough horseman must know his horse intimately and adapt the treatment to the temperament of the animal.

Q. 2. In what countries and in what campaigns has the author applied this system?

A. The system is a matter of growth with him, but he began it in the cavalry service at the battle of Solferino; has seen service in Mexico, during Maximilian's occupation; also

in Algeria, Morocco, and Syria, and in France in the war of 1870. In all of these he has insisted on the individuality of the horse and rider joined — that reconnaissance work should be one by individual horsemen rather than by platoons or squadrons. The seat is the cavalry soldier's true capital, and only when that is perfect is the combination (man-horse) valuable in war. Mr. de Bussigny's squadron had its flag decorated on account of its promptness, energy, and bravery at Pablo del Monte in Mexico. In France, in 1870, he had six hundred green horses ridden by six hundred green men in a hard campaign, and he had hardly a single sore back or lame horse.

He enlarged on the effect of the rider's nervousness on the horse; no matter whether this nervousness came from embarrassment, fright, or want of knowledge what to do, it was immediately communicated to the horse. If he rode a horse without a thought or care as to his management, the rider was left free to devote all his thoughts and faculties to the business at hand.

Q. 3. In what does the theory of the system consist?

A. It is based on the individuality to be given to each horseman, and by its simplicity gives that horseman the possibility of being the trainer of his own animal. The horse is no longer restive; does not want to go wrong; he is controlled by the rider's legs and by them he is impelled forward.

He is sustained and directed by his bridle. The two legs of the rider producing an equal effect will equally impel the horse forward. By the bridle, he will be equally sustained and directed, and the motion will necessarily be straight to the front. The impulsion forward given to the horse by the two legs of the rider, being increased by one of the legs without relaxing the effect of the opposite leg, will determine the horse to turn to the right or the left. If the pressure of the legs is equal, and the horse equally sustained by the

bridle, he will have his spine straight, and consequently be able to carry weight, to regulate his gait, and be less fatigued, and consequently less subject to lameness and sickness. If the impulse given by the legs be decreased, and the sustaining effect of the bridle increased, the horse will diminish or stop his motion forward. The effect of the legs and bridle being applied to the horse, and the effect of the bridle then increased, the impulsion of the horse will be backward. The horse being stopped, a quick increase of effect of the left leg of the rider, without relaxing the effect of the right leg, will determine a quick answer of the left hind leg of the horse. The immediate raising of the hand of the rider will raise the fore hand of the horse, and as it is impossible for him to sustain the weight of his body on his left hind leg only, the opposite (right) will come immediately to sustain and assist the impulsion. The cessation of the effect of the hand will allow the fore hand to return immediately to the ground, and the gallop will be determined to the left. In this system there is no change of position of the rider. He leans neither forward nor backward; consequently, there is no unusual strain on the horse, and a perfect seat is kept at all times. The charge is only an extension of the gallop.

The leap is accomplished by increasing the effect of both hand and legs at the same time instant, and then diminishing them simultaneously, afterwards sustaining the horse by a renewal of both.

Q. 4. What is the practicability of applying this system to the Army?

A. It is very essential to have a system that is uniform, and one that will combine all that is necessary in the fewest possible movements. To this end he has reduced them to three simple ones. First, to go forward; second, to go backward; and third, to turn to the right or to the left. Baucher used fifteen, most of which were unnecessary and impractical; as Mr. de Bussigny has simplified it, it is within the compre-

hension and ability of any soldier, and must make a good, if not a perfect horseman of him.

Q. 5. What was the result of the practical work before the Board?

This question he left the Board to answer. All of this work was that of a master, whether he used old and thoroughly broken horses, trained, or new and unbroken animals. With his own horse he showed all the gaits and motions of the circus rider; made him walk, trot, and gallop in place and backward. In short, he showed him a thoroughly trained animal. New animals that he had never ridden before were got under control immediately, and gaited to his taste. The Board is convinced that few men are capable of arriving at the degree of perfection attained by Mr. de Bussigny, but it believes that the system is the best of any known to the Board, and that it can be applied to the Army in general with great benefit. The system was most satisfactorily illustrated to the Board by some of Mr. de Bussigny's pupils. The only system of treatment that Mr. de Bussigny used or desired to explain was one for horses broken down and not diseased, or those having deficient muscles. His entire system consists in determining exactly what muscles needed increasing, diminishing, or treating, and then by proper gymnastic exercises correcting the defect. Several horses under treatment were shown and the results to be obtained were explained. The methods were certainly ingenious, and would probably be attended with success, but the Board did not remain long enough to witness any thorough accomplishment of his purpose. Mr. de Bussigny's only idea is to strengthen and develop the weakened or stiffened parts by a system of flexions and exercises, and by throwing out of use parts too highly developed, to partially paralyze them.

The subject of management is entirely considered in the preceding résumé, and may be described in a word as one of

gentleness, kindness, and careful training. His system is entirely unwritten and difficult to explain. He makes no claims for the handling of vicious or diseased horses other than as indicated.

The Board, believing that nothing further could be accomplished without extensive personal practice in this system, adjourned March 15th.

J. R. BRINCKLE,
Capt. 5th Artillery, President.
H. W. LAWTON,
Capt. 4th Cavalry, Member.
GEORGE S. ANDERSON,
Capt. 6th Cavalry, Recorder.

(*Endorsement*)

HEADQUARTERS OF THE ARMY,
March 29, 1888.

Respectfully submitted to the Secretary of War.

The report of this Board shows that Mr. de Bussigny's methods could be best employed if understood by officers. I know of no place where they could be carried into effect except at the Military Academy, where instruction in riding and horse management is now given to cadets who subsequently become commissioned officers, and I therefore recommend that his services be obtained for that post.

P. H. SHERIDAN,
Lieutenant-General, Commanding.

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